PRE-BID SITE VISIT SCHEDULED

ON SEPTEMBER 10, 2026
SEE ADVERTISEMENT FOR BIDS INSIDE

PROJECT MANUAL

PROJECT NO. 47477-E

ELECTRICAL WORK

RENOVATE ARMORY
STATE ARMORY
2 QUINCY PLACE
YONKERS, NY

JULY 20, 2026

KATHY HOCHUL
Governor

JEANETTE M. MOY
Commissioner

NEW YORK STATE | Office of General Services

PROJECT NO. 47477-E

ELECTRICAL WORK

RENOVATE ARMORY
STATE ARMORY
2 QUINCY PLACE
YONKERS, NY

JULY 20, 2026

CLIENT: DIVISION OF MILITARY AND NAVAL AFFAIRS

PROJECT TEAM LEADER: KEVIN RENAGHAN, RA, LEED AP, PMP

PREPARED BY
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Syracuse, NY 13204

A & J Consulting Engineering Services, PC
164 Brighton Rd
Clifton, NJ 07012
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0017726

PREPARED FOR
State of New York
Office of General Services
35th Floor, Corning Tower
The Governor Nelson A. Rockefeller
Empire State Plaza
Albany, NY 12242
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FAX (518) 473-7862

Affix Seal	Affix Seal	Affix Seal
		
09/30/2026		
Registration Expiration Date	Registration Expiration Date	Registration Expiration Date

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END OF LIST

ADVERTISEMENT FOR BIDS

Sealed bids for Project Nos. 47477-C, 47477-H, 47477-P and 47477-E, comprising separate contracts for Construction Work, HVAC Work, Plumbing Work, and Electrical Work, Renovate Armory, State Armory, 2 Quincy Place, Yonkers (Westchester County), NY, will be received by the Office of General Services (OGS), Design & Construction Group (D&C), Division of Contract Management, 35th Fl., Corning Tower, Empire State Plaza, Albany, NY 12242, on behalf of the Division of Military and Naval Affairs, until 2:00 p.m. on Wednesday, September 23, 2026, when they will be publicly opened and read. Each bid must be prepared and submitted in accordance with the Instructions to Bidders and must be accompanied by a bid security (i.e. certified check, bank check, or bid bond in the amount of $270,900 for C, $80,600 for H, $53,400 for P, and $81,600 for E).

All successful bidders will be required to furnish a Performance Bond and a Labor and Material Bond pursuant to Sections 136 and 137 of the State Finance Law, each for 100% of the amount of the Contract estimated to be between $10,000,000 and $15,000,000 for C, between $2,000,000 and $3,000,000 for H, between $1,000,000 and $2,000,000 for P, and between $2,000,000 and $3,000,000 for E.

Pursuant to State Finance Law §§139-j and 139-k, this solicitation includes and imposes certain restrictions on communications between OGS D&C and a bidder during the procurement process. A bidder is restricted from making contacts from the earliest posting on the OGS website, in a newspaper of general circulation, or in the Contract Reporter, of written notice, advertisement or solicitation of offers, through final award and approval of the contract by OGS D&C and the Office of the State Comptroller ("Restricted Period") to other than designated staff, unless it is a contact that is included among certain statutory exceptions set forth in State Finance Law §139-j(3)(a). Designated staff are Megan Whaley, Catherine Skaczkowski, Jessica Hoffman, and Pierre Alric in the Division of Contract Management, telephone (518) 474-0203, fax (518) 473-7862. For inquires related specifically to Minority and Women-Owned Business Enterprises (MWBE) and to Service-Disabled Veteran Owned Businesses (SDVOB) provisions of this procurement, the designated contact is Tryphina Ramsey, telephone (518) 486-9284 or email **OGS.sm.MWBE@ogs.ny.gov**. OGS D&C employees are also required to obtain certain information when contacted during the restricted period and to make a determination of the responsibility of the bidder pursuant to these two statutes. Certain findings of non-responsibility can result in rejection for contract award and in the event of two findings within a four-year period, the bidder is debarred from obtaining governmental Procurement Contracts. Bidders responding to this Advertisement must familiarize themselves with the State Finance Law requirements and will be expected to affirm that they understand and agree to comply on the bid form. Further information about these requirements can be found within the project manual or at: **https://ogs.ny.gov/ACPL/**

Pursuant to Public Buildings Law § 8(6), effective January 11, 2020, for any projects where the project design commenced on or after January 1, 2020 and for any contracts over $5,000 for the work of construction, reconstruction, alteration, repair, or improvement of any State building, a responsible and reliable NYS-certified Minority or Women-Owned Business Enterprise that submits a bid within ten percent of the lowest bid will be deemed the apparent low bidder provided that the bid is $1,737,918 or less, adjusted annually for inflation as of March 1, 2026. If more than one responsible and reliable MWBE firm meets these requirements, the MWBE firm with the lowest bid will be deemed the apparent low bidder.

___Project commenced design before January 1, 2020. Not subject to provision.
XX Project commenced design on or after January 1, 2020. Subject to provision.

The substantial completion date for this project is 631 days after the Agreement is approved by the Comptroller.

As a condition of award, within five (5) days of receipt of the proposed Contract Agreement from the State, the apparent low bidder shall return the Contract Agreement to the State, properly executed, along with the Bonds if required by said Agreement. Low bidders who cannot meet these provisions may be subject to disqualification and forfeiture of the bid security.

The only time prospective bidders will be allowed to visit the job site to take field measurements and examine existing conditions of the project area will be at 10:00 a.m. on September 10, 2026, at State Armory, 2 Quincy Place, Yonkers, NY. Prospective bidders are urged, but not mandated, to visit the site at this time. Prospective bidders or their representatives attending the pre-bid site visit will not be admitted on facility grounds without proper photo identification. Note that parking restrictions and security provisions will apply, and all vehicles will be subject to search. Refer to Document 002218 for any additional requirements for attendance at the pre-bid site visit.

Phone the office of Allison Krebs-Fogel, (914-941-1122) a minimum of 24 hours in advance of the date to provide the names of those who will attend the pre-bid site visit. Only contractors that schedule a visit at least 24 hours in advance will be allowed to participate in the pre-bid site visit.

Pursuant to New York State Executive Law Article 15-A and the rules and regulations promulgated thereunder, OGS is required to promote opportunities for the maximum feasible participation of New York State-certified Minority and Women-owned Business Enterprises ("MWBEs") and the employment of minority group members and women in the performance of OGS contracts. All bidders are expected to cooperate in implementing this policy. OGS hereby establishes an overall goal of 30% for MWBE participation, 15% for Minority-Owned Business Enterprises ("MBE") participation and 15% for Women-Owned Business Enterprises ("WBE") participation (based on the current availability of qualified MBEs and WBEs). The total contract goal can be obtained by utilizing any combination of MBE and /or WBE participation for subcontracting and supplies acquired under this Contract. Trades with 0% goals are encouraged to make "good faith efforts" to promote and assist in the participation of MWBEs on the Contract for the provision of services and materials.

Article 3 of the Veteran's Services Law provides for more meaningful participation in public procurement by certified Service-Disabled Veteran-Owned Businesses ("SDVOBs"). Bidders are expected to consider SDVOBs in the fulfillment of the requirements of the Contract. Such participation may be as subcontractors or suppliers, as protégés, or in other partnering or supporting roles. OGS hereby establishes overall goals for SDVOBs' participation under this contract as follows: 6% for the C trade contractor, 3% for the E trade contractor, 3% for the H trade contractor, and 3% for the P trade contractor, based on the current availability of qualified SDVOBs. Trades with 0% goals are encouraged to make "good faith efforts" to promote and assist in the participation of SDVOBs on the Contract for the provision of services and materials.

The Office of General Services reserves the right to reject any or all bids.

Downloading Bidding and Contract Documents for this project, along with the submission of Bidder Questions and Electronic Bidding are available through OGS Design & Construction's electronic bidding service, Bid Express at the following link: **http://www.bidexpress.com**

For questions about registration or Bid Express technical issues, e-mail **support@bidexpress.com**, or call Bid Express support (888) 352-2439.

For all other questions, email **DCPlans@ogs.ny.gov**, or call (518) 474-0203.

For additional information on this project, use the link below and then click on the project number:

https://online.ogs.ny.gov/dnc/contractorConsultant/esb/ESBPlansAvailableIndex.asp.

OGS Design & Construction Group
END OF INFORMATION

DOCUMENT 002113

INSTRUCTIONS TO BIDDERS

1. EXAMINATION OF DOCUMENTS

1.1. Carefully examine and be familiar with the Bidding and Contract Documents.

1.2. Examine information concerning subsurface or other latent physical conditions. It is presented in good faith but is not intended as a substitute for personal investigation, interpretations, or judgment of the Contractor.

2. VISIT TO THE SITE

2.1. For projects that include Document 002218, visit the Site of the Work prior to submitting your bid. Refer to the Advertisement for Bids for any special instructions.

2.2. Become familiar with restrictions and regulations established by the facility. Existing restrictions and regulations will not be considered as grounds for any additional cost over the Contract sum.

2.3. Assume the risk of encountering any subsurface or other latent physical condition that can be reasonably anticipated on the basis of documentary information provided by the State and from inspection and examination of the Site.

2.4. Interpretations of contract documents by facility personnel are not binding.

3. DESIGNATED, PERMISSIBLE, IMPERMISSIBLE CONTACTS AND QUESTIONS

3.1. The designated contacts during the restricted period for this procurement will be:

- Megan Whaley, Contract Awards Unit, telephone – (518) 474-0203, fax – (518) 473-7862
- Catherine Skaczkowski, Contract Awards Unit, telephone – (518) 474-0203, fax – (518) 473-7862
- Jessica Hoffman, Assistant Director, Contract Management, telephone – (518) 474-0203
- Pierre Alric, Director, Contract Management, telephone – (518) 474-0201
- For inquires related specifically to Minority and Women-Owned Business Enterprises (MWBE) and to Service-Disabled Veteran Owned Businesses (SDVOB) provisions of this procurement, the designated contact is Tryphina Ramsey, telephone (518) 486-9284 or email **OGS.sm.MWBE@ogs.ny.gov**.

3.2. State Finance Law §139-j recognizes a series of permissible contacts that can go to other than the designated contacts, as follows:

3.2.1. The submission of written proposals in response to a request for proposals, invitation for bids or any other method for soliciting a response from offerers intending to result in a procurement contract.

3.2.2. The submission of written questions to a designated contact set forth in a request for proposals, or invitation for bids, or any other method for soliciting a response from offerers intending to result in a procurement contract, when all written questions and responses are to be disseminated to all offerers who have expressed an interest in the request for proposals, or invitation for bids, or any other method for soliciting a response from offerers intending to result in a procurement contract.

3.2.3. Participation in a conference provided for in a request for proposals, invitation for bids, or any other method for soliciting a response from offerers intending to result in the procurement contract.

3.2.4. Complaints by an offerer regarding the failure of the person or persons designated by the procuring governmental entity pursuant to this section to respond in a timely manner to authorized offerer contacts made in writing to the office of general counsel of the procuring governmental entity, provided that any such written complaints shall become a part of the procurement record.

3.2.5. Offerers who have been tentatively awarded a contract and are engaged in communication with a governmental entity solely for the purpose of negotiating the terms of the procurement contract after being notified of tentative award.

3.2.6. Contacts between designated governmental staff of the procuring governmental entity and an offerer to request the review of a procurement contract award.

3.2.7. Contacts by offerers in protests, appeals or other review proceedings (including the apparent successful bidder or proposer and his or her representatives) before the governmental entity conducting the procurement seeking a final administrative determination, or in a subsequent judicial proceeding.

3.2.8. Complaints of alleged improper conduct in a governmental procurement to the attorney general, inspector general, district attorney, or court of competent jurisdiction.

3.2.9. Written protests, appeals, or complaints to the New York State Office of the State Comptroller (OSC) during the process of contract approval, where OSC's approval is required by law, and where such communications and any response thereto are made in writing and shall be entered in the procurement record pursuant to §163 of the State Finance Law.

3.2.10. Complaints of alleged improper conduct in a governmental procurement conducted by a municipal agency or local legislative body to OSC's office.

3.2.11. Permissible Contacts are only with the procuring agency unless specifically excepted.

3.3. Impermissible contacts include those that a reasonable person would infer are intended to influence a governmental procurement and occur during the restricted period of a governmental procurement between the offerer and any member, officer or employee of any governmental entity; provided, however, that nothing in this section shall be deemed to prohibit an offerer from communicating with a member of the state legislature or legislative staff about a governmental procurement. Contacting a person or entity other than the designated contact person during the restricted period, when such contact does not fall within one of the exemptions, is also an impermissible contact.

Direct all questions regarding the intent or meaning of the drawings or specifications to the Office of General Services (OGS) through OGS Design & Construction's Electronic Document and Bidding service, Bid Express®. Registration along with downloading and electronic bidding can be accessed at the following website: **http://www.bidexpress.com.**

Click on "User Login" and enter your username and password or "Sign Up" if you do not have an account. After logging in, select "Solicitations" then enter the project number or the name of the project. Scroll down to the "Q & A" section and select "Ask a Question".

All responses to appropriate pre-bid inquiries will be communicated via the OGS website and Bid Express. Those inquiries resulting in clarification and or changes to the bid documents will be communicated by Addenda to all persons who have obtained drawings and specifications.

3.4. Pre-bid inquiries answered by means other than Addenda will not be binding.

4. PREPARATION OF BIDS

4.1. **For electronic bids**: Prepare and submit bid using Bid Express®.

4.1.1. Prepare each bid on the official form furnished by the State within the Bid Express® website. Fill in all blank spaces. An incomplete entry may disqualify the bid in its entirety. No post bid meetings will be afforded to any bidder to explain or clarify an incomplete bid or entry omission(s).

4.1.2. Bidders must be registered with Bid Express® in advance. Bidders not previously registered with Bid Express® must complete a one-time registration for a user account. There is no cost to register, to view/download bid documents, or to submit a bid. Vendors can select 'Pay per solicitation (non-member)' when registering.

4.1.3. Bid Security is required in accordance with the BID SECURITY INFORMATION section within this document. Bidders must be registered with a Bid Express® approved bonding service in advance. Bidders

not already registered must register with a Bid Express® approved bonding service, and shall refer to the instructions contained in the BID SECURITY INFORMATION section within this document.

4.1.4. Bidders must establish an Infotech® Digital ID in advance. The Infotech® Digital ID application process may take up to seven business days to complete. Refer to http://www.bidexpress.com for guidance on the application for and installation of Digital IDs. The Digital ID is an electronic tool that allows users to digitally sign bids, contracts, and forms. Digital IDs are used as part of a secure method of maintaining confidentiality and identity verification within the Bid Express® service.

4.2. **For paper bids**: Prepare each bid on the official form furnished by the State.

4.2.1. Make no erasures, cross-outs, whiteouts, write-overs, obliterations, or changes of any kind in the Bid Form phraseology, in the entry of unit prices, or anywhere on the Bid Form.

4.2.2. Fill in all blank spaces legibly. An illegible entry may disqualify the bid in its entirety. If a mistake is made, use a new Bid Form. No post bid meetings will be afforded to any bidder to explain or clarify illegible or changed entries.

4.2.3. Sign the Bid Form in the space provided. An officer or a principal of a corporation or a partnership signing for the bidder shall print or type the legal name of the person, partnership, or corporation on the line provided and place his/her signature after "SIGN BID HERE". The same procedure shall apply to the bid of joint venture by two or more firms, except that the signature and title of an officer or a principal of each member firm of the joint venture shall be required. All signatures must be original. Mechanically reproduced signatures, stamps, or copies are not acceptable. Submitted Bid Forms that do not conform to these requirements will be disqualified.

4.3. For paper or electronic bids, if the Project Manual contains Section 012300 - Alternates, indicate the amounts to be added to or deducted from the base bid in the spaces provided on the Bid Form. If the Work is to be performed at no change in cost, indicate "0". Any bid which fails to indicate an amount for each alternate will be held to be informal and may be rejected.

4.4. For paper or electronic bids, note in the space designated on the Bid Form, each Addenda by numbers, which have been issued.

4.4.1. For paper bids: If no Addenda have been issued, insert the word "NONE" in the space designated on the Bid Form.

4.5. For paper or electronic bids, all contractors submitting bids on public work projects are required to register with the New York State Department of Labor (NYSDOL) under Labor Law Section 220-i. The registration number must be entered in the space provided on the Bid Form. A complete and accurate registration number must be entered in the space provided on the Bid Form. Failure to possess an active and verifiable registration at the time of bid will result in disqualification of the bid.

4.6. All bidders must complete a form DCA-3 – ***Offerer Disclosure of Prior Non-Responsibility Determinations*** and submit it with their Bid.

4.6.1. For electronic bids: Complete and submit form DCA-3 within the Bid Express® website. Fill in all blank spaces.

4.6.2. For paper bids: Complete paper form DCA-3 and include it with the Bid Form. Fill in all blank spaces.

4.7. All bids, regardless of dollar value, must include the cost of Labor and Material and Performance Bonds.

5. BID SECURITY INFORMATION

5.1. Bid security is required as a guarantee that the bidder will enter into the Contract and furnish a satisfactory Performance Bond and Labor and Material Bond within the time specified on the Bid Form. Submit bid security in the amount indicated in the Advertisement for Bids in one of the following forms:

5.1.1. Certified check or bank check drawn upon a legally incorporated bank or trust company (payable to the Office of General Services).

5.1.2. Bid Bond on OGS Form 004313 to be issued by a Surety licensed in the State of New York.

5.1.2.1. **For electronic bids**: Electronic bid bond furnished by a Bid Express® approved bonding service is required for an Electronic Bid. Vendors must be registered with a Bid Express® approved bonding service. Refer to http://www.bidexpress.com for guidance and registration information. Vendors not already registered must complete a one-time registration with a Bid Express® approved bonding service. At the time of this publication, the Bid Express® approved bonding services are Tinubu at https://www.tinubu.com, or Surety2000 at https://surety2000.com. Allow sufficient time for account registration and bond processing prior to the bid due date noted in the Advertisement for Bids.

5.1.2.2. **For paper bids:** Sign the bid bond in the space provided. An officer or a principal of a corporation or a partnership signing for the bidder shall print or type the legal name of the person, partnership, or corporation on the line provided and place his/her signature above "Principal". The same procedure shall apply to the bid security of a joint venture by two or more firms, except that the signature and title of an officer or a principal of each member firm of the joint venture shall be required. The same procedure shall apply to the signature for the Attorney-in-Fact. All signatures must be original. Electronic, mechanically-reproduced or stamped signatures, or copies, are not acceptable for either signature. Submitted Bid Security that does not conform to these requirements will be disqualified

5.2. Upon submission of a certified check or bank check, the bid security of the successful bidder will be returned (check issued by OSC) pending acceptance of the required bonds and the execution of Contract. The second low bidder's bid security will be returned after the successful bidder executes the Contract or with the submission of an approved Substitute Bid Bond on the Design and Construction form. The bid security of all other bidders with a bid security in the form of checks will be returned as soon as possible after the apparent low bidder has been determined.

5.3. Bid Bonds submitted as bid security will not be automatically returned to the bidder. Firms requesting to have bonds returned may do so in writing provided they are not the first or second low bidder prior to award. Only those requests made in writing, directed to the Contract Awards Unit, shall be considered for return.

6. SUBMISSION OF BID

6.1. Do not submit both electronic and paper bids. If both an electronic bid from Bid Express® and a paper bid are received from the same contractor, the electronic bid from Bid Express® will prevail, and the paper bid(s) will be disqualified.

6.2. Submit Bid Form, Bid Security and Form DCA-3 – ***Offerer Disclosure of Prior Non-Responsibility Determinations.***

6.2.1. **For electronic bids**: Complete and submit within Bid Express®.

6.2.1.1. Within Bid Express®, select the procurement from the 'Solicitations' tab and click 'Select For Bidding'. Fill in all blank spaces.

6.2.1.2. In accordance with the BID SECURITY INFORMATION section contained within this document, coordinate with a Surety Agent to obtain a Bond ID from one of the Bid Express® approved bonding services. Refer to the instructions in the BID SECURITY INFORMATION section of this document. Complete the Bid Bond information section within Bid Express® and click 'Verify Bid Bond'. Failure to submit a valid Bond ID from an approved electronic bonding service for a bond of the specified value may result in automatic bid disqualification.

6.2.1.3. Click 'Check Bid' and resolve any errors. Click 'Submit Bid'. Sign the electronic bid form using a Bid Express® approved digital ID by clicking 'Submit Bid'.

6.2.2. **For paper bids:** Provide bid in a sealed envelope addressed to:

NYS Office of General Services – Design & Construction Group
Division of Contract Management, Contract Awards Unit
35th Floor, Corning Tower
Albany, NY 12242

Exterior of sealed envelope shall include the words "SEALED BID ENCLOSED", Project Number and Trade Designation of Bid, Bid Due Date, Company Name, Address and Federal ID Number.

6.2.3. Telephone, email, fax, or electronic bids other than electronic bids submitted within Bid Express® will not be accepted.

6.3. All bids must be received before the time specified, and at the place designated for the receipt of bids.

6.4. **Late Bids**:

6.4.1. Electronic bids cannot be accepted after the due date and time.

6.4.2. Paper bids received after the due date and time will be returned unopened with notification of the reason for its refusal.

6.4.3. A late paper bid will be considered if: (1) its arrival at the place designated after the time specified can be shown by documentary or other proofs to be due to mishandling by OGS and (2) that absent such mishandling, the bid would have arrived timely. Delays in the mail or any other means of transmittal, including couriers or agents of the State, other than employees of OGS will not suffice to excuse late arrival of the bid.

7. MODIFICATION OF BID

7.1. Bid Modifications By Amendment:

7.1.1. **For Modification to Electronic Bids:** Electronic bids may be modified on Bid Express® up to the deadline for receipt of bids. To modify your bid, access your bid in Bid Express®, modify applicable component(s), select Submit Bid to update the bid. Refer to the Submission Status to confirm the Last Submitted date and time. Only the submitted bid will be considered.

7.1.2. **For Modification to Paper Bids:** Modifications by amendment will only be considered on condition that the amendment arrives before the time specified and at the place designated for receipt of bids, and

7.1.2.1. The amendment is in writing and executed by a principal of the bidder firm, and

7.1.2.2. The bid, as amended, conforms in all respects with the Contract Documents. Bidders may mail or fax their bid modifications. Fax bid modifications to (518) 473-7862. Bidders may use a bid modification to acknowledge addenda and/or change the bid amount. Bid modifications received by fax must be on company letterhead and signed by a principal of the bidder firm. DO NOT use the OGS Bid Form to submit bid modifications by fax. Indicate any amounts to be added to or deducted from any part of the bid amount with the words "ADD" or "DEDUCT" next to the amount. The only amounts listed on a faxed bid modification should be the amounts to be added or deducted. **DO NOT expose the new bid amount on the faxed bid modification.** If the bid amount is shown on the faxed bid modification, or otherwise exposed at any time before the bid opening, the bid will be disqualified.

8. WITHDRAWAL OF BID

8.1. A bid may be withdrawn at any time prior to the time specified for receipt of bids.

8.1.1. For electronic bids, bidders can withdraw their bids on Bid Express® up to the time specified for receipt of bids.

8.1.2. For paper bids, should a bidder decide to withdraw its bid before the bid opening, the request must be prepared on company letterhead, signed by a principal of the bidder firm, and faxed to (518) 473-7862, or hand-delivered or mailed to the Contract Awards Unit at the place designated for receipt of bids. OGS will

e-mail an acknowledgment of the withdrawal request that includes an indication that the unopened bid will be returned. Should the withdrawal request be in error, the bidder must call the Contract Awards Unit at (518) 474-0203 immediately. The unopened bid will be returned by mail to the bidder.

8.2. Not more than 7 calendar days after the bid opening or a scheduled pre-award meeting, whichever comes later, a low bidder may request the withdrawal of its bid based on a mistake. The request must be submitted via certified or registered mail to the address in Paragraph 6.2.2 of these Instructions to Bidders. The Contracting Officer may conduct or have conducted on his/her behalf a fact-finding proceeding to develop information concerning the request for withdrawal. A request for withdrawal of a bid made after the specified number of days allowed shall result in forfeiture of the bid security.

8.3. Following a timely request for withdrawal of a bid, the bid security will be returned if the bidder establishes by credible evidence, including original documents when requested, the following:

8.3.1. An error, clerical as opposed to judgmental in nature and verifiable by written evidence, occurred in the computation of the bid,

8.3.2. The error constitutes either an unintentional and substantial computational error or an unintentional omission of a substantial quantity of labor and/or material from the final bid computation,

8.3.3. The absence of gross negligence in the preparation of the bid. For the purposes of this subparagraph, gross negligence may include:

i) the apparent failure of a bidder to account for two or more categories (divisions) of work,

ii) the use of multiple erroneous quotations from subcontractors or suppliers,

iii) submission to the Contracting Officer of a bid withdrawal request within the preceding six (6) months.

8.4. If the bidder fails to meet its burden of proof, the request to withdraw without penalty shall be denied and its bid security will be forfeited and become the property of the State. The decision of the Contracting Officer shall be final and conclusive.

8.5. Once a request to withdraw is made, the bidder is ineligible for award. The Contracting Officer shall continue to progress the award process considering only the remaining bids.

9. DISQUALIFICATION

9.1. Any bid which fails to conform to the requirements of the Bidding and Contract Documents may be rejected.

9.2. The Commissioner may waive any informality or afford the bidder an opportunity to remedy any deficiency resulting from a minor informality or irregularity.

9.3. The State reserves the right to disqualify bidders, before or after bid opening, upon evidence of collusion with third parties or other illegal practices upon the part of the bidder.

9.4. Bidders may review the list of common Bid Informalities and Bid Disqualifications at:

https://online.ogs.ny.gov/dnc/contractorConsultant/esb/informalitylist.asp

10. GOVERNING LAWS AND REGULATIONS ADMINISTERED BY OTHER DEPARTMENTS

10.1. **Taxes**: All taxes pertaining to the Work must be paid. Address inquiries regarding taxes to the Tax Collecting Agency. For information regarding sales and use taxes contact the Sales Tax Bureau, Department of Taxation and Finance.

10.2. While all applicable laws, rules and regulations of the State of New York are incorporated by reference in this Contract, take special note of the provisions of the Labor Law and Industrial Code Rule 23 relative to the safety of workers and of persons lawfully occupying or using the premises. Address inquiries regarding labor law provisions to the New York State Department of Labor.

10.3. **Anti-Discrimination Clause**: Discrimination against any employee or applicant for employment because of race, creed, color, national origin, sex, age, disability, or marital status is prohibited.

11. OPENING OF BIDS

Bids will be opened as announced in the Advertisement for Bids.

12. DETERMINATION OF CONTRACTOR'S RESPONSIBILITY

12.1. The State Public Buildings Law requires that contracts for public work in the State of New York be awarded to the lowest responsible and reliable bidders as will best promote the public interest.

12.2. Each apparent low bidder, and each proposed subcontractor (for subcontract work of $100,000 or more) will be required to submit form CCA-2 - ***New York State Vendor Responsibility Questionnaire For Profit Construction*** prior to contract award or subcontractor approval. OGS reserves the right to request CCA-2 forms from proposed subcontractors for work of less than $100,000 if it is determined to be in the best interest of the State. Submission of these forms will assist the State in determining the responsibility and reliability of the vendor.

OGS recommends that vendors file the required CCA-2 form online via the New York State VendRep System. Use of this system requires that the vendor have a New York State Vendor Identification Number (Vendor ID). Please note that the Vendor ID is not the Taxpayer ID number.

If bidders do not already have a Vendor ID, they are encouraged to obtain one ***in advance of*** the bid opening.

To obtain a Vendor ID, contact the OSC Help Desk at 866-370-4672 or 518-408-4672, or by e-mail at ITServiceDesk@osc.state.ny.us.

To enroll in and use the VendRep System, see the **VendRep System** page at:

http://www.osc.state.ny.us./vendrep/info_vrsystem.htm

If you already have a User ID and password, go directly to the VendRep System online at:

https://www.osc.state.ny.us/state-vendors/vendrep/file-your-vendor-responsibility-questionnaire

For direct VendRep System user assistance, contact the OSC Help Desk; the help desk phone numbers and e-mail address are shown above.

Vendors opting to file a paper questionnaire can obtain the appropriate questionnaire from the VendRep website at **http://www.osc.state.ny.us/vendrep/forms_vendor.htm** or may telephone the OSC Help Desk.

12.3. After the bids are opened, the apparent low bidder shall complete and file the CCA-2 within 5 days. Vendors using the online system may certify (or recertify) and file the CCA-2 electronically via the VendRep System: **https://www.osc.state.ny.us/state-vendors/vendrep/file-your-vendor-responsibility-questionnaire**

12.4. It is recommended that all bidders become familiar in advance with all of the requirements of the CCA-2. As mentioned in 12.2, bidders who do not have a Vendor ID are encouraged to obtain one in advance of the bid opening.

12.5. All bidders must submit a completed form DCA-3 - ***Offerer Disclosure of Prior Non-Responsibility Determinations*** along with their Bid Form.

12.6. The determination of responsibility will include a review to ensure the Contractor has not knowingly and willfully violated the provisions of the Procurement Lobby Law or New York State Finance Law §139-j and §139-k.

12.7. New York State Finance Law §139-k (2) obligates a Governmental Entity to obtain specific information regarding prior non-responsibility determinations. This information must be collected in addition to the information that is separately obtained pursuant to State Finance Law §163(9). In accordance with State Finance Law §139-k, a Contractor must be asked to disclose whether there has been a finding of non-responsibility made within the previous four (4) years by any Governmental Entity due to: (a) a violation of State Finance Law §139-j or (b) the intentional provision of false or incomplete information to a Governmental Entity.

12.8. As part of its responsibility determination, State Finance Law §139-k(3) mandates consideration of whether a Contractor fails to timely disclose accurate or complete information regarding the above non-responsibility

determination. In accordance with law, no procurement contract shall be awarded to any Contractor that fails to timely disclose accurate or complete information under this section, unless a finding is made that the award of the Procurement Contract to the Offerer is necessary to protect public property or public health safety, and that the Offerer is the only source capable of supplying the required Article of Procurement within the necessary time frame.

13. AWARD OF CONTRACT

13.1. The Contract may be awarded to the lowest responsible and reliable bidder as will best promote the public interest.

13.2. If alternates are included in the bidding documents, the State reserves the right to accept or reject any or all alternates. The State shall determine the lowest bid by adding to or deducting, from the Base Bid Amount of the bidders, the additive or deductive alternates, if any, that the State elects to accept after the opening of the bids. Alternates will be accepted in the order they are set forth in the contract documents.

13.3. The State reserves the right to reject any or all bids, and advertise for new bids, if in its opinion the best interest of the State will thereby be promoted. In the event that all bids are rejected, each bidder will be so notified.

13.4. A bidder may withdraw its bid if no award is made within forty-five (45) days after the receipt of bids. A written notice must be submitted via certified or registered mail to the address in Paragraph 6.2.2 of these Instructions to Bidders prior to approval of the contract by OSC. The notice must clearly state that the withdrawal is based on the fact that the contract was not awarded within 45 days after the receipt of bids.

13.5. Pursuant to Public Buildings Law § 8(6), effective January 11, 2020, for any projects where the project design commenced on or after January 1, 2020 and for any contracts over $5,000 for the work of construction, reconstruction, alteration, repair, or improvement of any State building, a responsible and reliable NYS-certified Minority or Women-Owned Business Enterprise ("MWBE") that submits a bid within ten percent of the lowest bid will be deemed the apparent low bidder provided that the MWBE bid is $1,737,918 or less, adjusted annually for inflation as of March 1, 2026. If more than one responsible or reliable NYS-certified MWBE firm meets these requirements, the MWBE firm with the lowest bid will be deemed the apparent low bidder. Refer to the Advertisement for Bids for applicability of projects subject to this criteria.

14. MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES

14.1. Pursuant to New York State Executive Law Article 15-A and the rules and regulations promulgated thereunder, OGS is required to promote opportunities for the maximum feasible participation of NYS-certified Minority- and Women-owned Business Enterprises and the employment of minority group members and women in the performance of OGS contracts.

14.2. Information on the availability of subcontractors and suppliers for this project may be accessed by first using the following website link:

https://online.ogs.ny.gov/dnc/contractorConsultant/esb/esbplansavailableindex.asp

From this web page, first click on the project number link, then on Interested Subcontractors and Suppliers, and follow the prompts. A list of all interested vendors will be provided with their contact information, MWBE and SDVOB status', and construction specialties.

14.3. Other information on MWBEs, including a directory of MWBE's, is available from:

NYS Empire State Development
Minority and Women's Business Development Division
30 South Pearl Street
Albany, NY 12245
Telephone: (518) 292-5252
Website: https://esd.ny.gov/doing-business-ny/mwbe

15. SURETY BOND

If required, the Contractor shall furnish Performance and Payment Bonds in an amount equal to one hundred percent (100%) of the total Contract price as security for the faithful performance of this Contract, and for the payment of all persons performing labor or furnishing materials in connection with this contract. These bonds are to be executed on the State Comptroller's form and the surety company must be licensed in the State of New York, have a Best Rating of A- or better and appear on the most recent published Department of the Treasury's Listing of Approved Sureties (Department Circular *570*) at the time of filing the bonds.

16. VENDOR PROTEST POLICY

It is the policy of OGS to provide all vendors, prospective bidders, bidders, suppliers and contractors with an opportunity to resolve complaints or inquiries related to bid solicitations, contract awards, or other associated contract award actions. OGS encourages vendors to seek resolution of complaints related to bid solicitations, contract awards, or other associated actions through consultation with the agency designated contact(s). All such complaints will be given impartial and timely consideration. Vendors may also file formal written protests. A copy of the Design and Construction Vendor Protest Policy and Procedures may be obtained by contacting the designated contact or by visiting the OGS website at:

https://ogs.ny.gov/design-construction/vendor-protest-policy-procedures

17. POLICY ON TIED BIDS

A tie-bid is defined as an instance where bids are received from two or more bidders who are the apparent low responsive and reliable bidders with identical offers, or who are MWBEs with identical offers with bids of $1,737,918 or less and whose bids are within ten percent of the lowest bid. A tie-bid does not exist when an apparent low bidder has an identical offer to an MWBE, as the MWBE is deemed the apparent low bidder pursuant to Public Buildings Law § 8(6). It is the policy of OGS to settle the outcome of tie-bids by either drawing a name from a hat or flipping a coin within 24 hours of the bid opening. All affected firms will be notified of the tie and the time and place of the resolution of the tie, and shall be invited to witness the outcome. Attendance is not mandatory. The drawing/flip will be held at OGS, Contract Awards Unit, 35th Floor, Corning Tower, Albany, New York. Two impartial witnesses will be provided and shall be present. All attendees will acknowledge the results of the tie-breaker on the bid tabulation sheet. All firms affected by the tied bids will be notified of the results. The results pursuant to this provision shall be considered final.

18. WORKERS' COMPENSATION INSURANCE AND DISABILITY BENEFITS REQUIREMENTS

Workers' Compensation Law (WCL) §57 & §220 requires the heads of all municipal and state entities to ensure that businesses applying for permits, licenses or contracts provide proof that they have appropriate workers' compensation and disability benefits insurance coverage. These requirements apply to both original contracts and renewals, whether the governmental agency is having the work done or is simply issuing the permit, license or contract. Failure to provide proof of such coverage or a legal exemption will result in a rejection of the vendor's bid or renewal.

18.1. **Proof of Compliance with Workers' Compensation Coverage Requirements**: In order to provide proof of compliance with the requirements of the Workers' Compensation Law pertaining to workers' compensation coverage, a contractor shall: (1) obtain such coverage from an insurance carrier; or (2) be a Workers' Compensation Board-approved self-insured employer or participate in an authorized self-insurance plan; or (3) be legally exempt from obtaining Workers' Compensation insurance coverage.

An ACORD 25 form is **NOT** acceptable as proof of workers' compensation coverage.

A Contractor seeking to enter into a contract with the State of New York **MUST** provide **ONE** of the following forms to OGS upon request, prior to award:

18.1.1. CE-200, ***Certificate of Attestation of Exemption from NYS Workers' Compensation and/or Disability Benefits Coverage,*** which is available on the Workers' Compensation Board's website, www.wcb.ny.gov, under the heading "Forms"; **OR**

18.1.2. C-105.2 – ***Certificate of Workers' Compensation Insurance*** (the contractor's insurance carrier will send this form to OGS upon request); contractors insured through the New York State Insurance Fund should use their version of the form, the U-26.3; **OR**

18.1.3. SI-12 – ***Certificate of Workers Compensation Self-Insurance*** (the contractor should call the Workers' Compensation Board's Self-Insurance Office at 518 402-0247), **OR** GSI-105.2 – ***Certificate of Participation in Workers' Compensation Group Self-Insurance*** (the contractor's Group Self-Insurance Administrator will send this form to OGS upon request).

18.2. Proof of Compliance with Disability Benefits Coverage Requirements: In order to provide proof of compliance with the requirements of the Workers' Compensation Law pertaining to disability benefits, a contractor shall: (1) obtain such coverage from an insurance carrier; or (2) be a Board-approved self-insured employer; or (3) be legally exempt from obtaining disability benefits coverage.

An ACORD 25 form is NOT acceptable as proof of disability benefits coverage.

A Contractor seeking to enter into a contract with the State of New York **MUST** provide **ONE** of the following forms to OGS upon request, prior to award:

18.2.1. CE-200 – ***Certificate of Attestation of Exemption from NYS Workers' Compensation and/or Disability Benefits Coverage,*** which is available on the Workers' Compensation Board's website**,** **www.wcb.ny.gov**, under the heading "Forms"; **OR**

18.2.2. DB-120.1 – ***Certificate of Disability Benefits Insurance*** (the contractor's insurance agent, broker or carrier will send this form to OGS upon request); **OR**

18.2.3. DB-155 – ***Certificate of Disability Benefits Self Insurance*** (the contractor should call the Workers' Compensation Board's Self-Insurance Office at 518 402-0247).

18.3. All of the above-referenced forms, except the CE-200, SI-12 and DB-155, must show the following as the Entity Requesting Proof of Coverage (entity being listed as the Certificate Holder):

NYS Office of General Services – Design & Construction Group
Division of Contract Management
35th Floor, Corning Tower, GNARESP
Albany, NY 12242

19. ELECTRONIC CONTRACTOR PAYMENTS (ECP)

The ECP Program is initiated with an Electronic Contractor Payments (ECP) Certification Form that is forwarded to the contractor with the project agreement and bond forms. This form must be completed, executed and returned with the executed Contract agreement in order for the contractor to participate in the ECP program. The executed ECP Certification Form will remain on file. Note that the certification will apply to this contract and to future ECP-eligible contracts.

19.1. Upon final approval of the contract, an e-mail will be sent to the contractor's designated e-mail address with a hyperlink that will enable the firm to register, using a temporary password, on the OGS Design & Construction Vendor Interface. The temporary password will be sent to the contractor in letter form that is mailed on the same day.

19.2. The OGS Vendor Interface website will provide the ability to view contract information, submit the detailed estimate and payments requests electronically, and communicate with OGS Design & Construction.

20. IRAN DIVESTMENT ACT

20.1 By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, bidder/Contractor (or any assignee) certifies that it is not on the "Entities Determined To Be Non-Responsive bidders/Offerers Pursuant to The New York State Iran Divestment Act of 2012" list ("Prohibited Entities List") posted on the OGS website at

http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf

and further certifies that it will not utilize on such Contract any subcontractor that is identified on the Prohibited Entities List. Additionally, bidder/Contractor is advised that should it seek to renew or extend a Contract awarded in response to the solicitation, it must provide the same certification at the time the Contract is renewed or extended.

20.2 During the term of the Contract, should OGS receive information that a person (as defined in State Finance Law §165-a) is in violation of the above-referenced certifications, OGS will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the Act within 90 days after the determination of such violation, then OGS shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, seeking compliance, recovering damages, or declaring the Contractor in default.

20.3 OGS reserves the right to reject any bid, request for assignment, renewal, or extension for an entity that appears on the Prohibited Entities List prior to the award, assignment, renewal or extension of a contract, and to pursue a responsibility review with respect to any entity that is awarded a contract and appears on the Prohibited Entities list after contract award.

21. NOT USED

END OF DOCUMENT

DOCUMENT 002213

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS - MWBE-EEO

This Supplement modifies the Instructions to Bidders. Where any part of the Instructions to Bidders is modified by this supplement, the unaltered provisions of that part shall remain in effect.

Add the following:

22. GOALS

22.1 To ensure meaningful participation in the Project of certified Minority- and Women-Owned Business Enterprises ("MWBEs") under the Contract, the Commissioner of General Services has established goals set forth in the Supplementary Conditions.

22.2 All bidders should note that important definitions and conditions relating to the foregoing MWBE goals are contained in the Supplementary Conditions.

22.3 In order to assist the State in determining compliance with the goals set forth in the Supplementary Conditions the apparent low bidder will be required to submit an MWBE Utilization Plan via the New York State Contracting System (NYSCS) prior to Contract award or subcontractor approval.

22.4 If unable to submit an MWBE Utilization Plan through the NYSCS, the apparent low bidder must use Form BDC 328 to submit the plan. The BDC 328 form is available for download at https://ogs.ny.gov/mwbe/forms and may be mechanically reproduced. Additional copies may be obtained upon request from the address listed in Paragraph 23.2 below.

22.5 The apparent low bidder must submit the completed MWBE Utilization Plan within seven (7) calendar days after the bids are opened. OGS will review the submitted MWBE Utilization Plan and advise the bidder of OGS acceptance or issue a notice of deficiency within twenty (20) days of receipt.

23. CERTIFICATION

23.1 All Minority- and Women-Owned Business Enterprises ("MBEs" or "WBEs") proposed as contractors, subcontractors or suppliers must be certified by the NYS Empire State Development, Division of Minority and Women's Business Development to be eligible for MBE or WBE credit on this project.

23.2 UPON WRITTEN REQUEST, The New York State Office of General Services' Office of Business Diversity (OBD) will provide a computer printout of certified MBEs and WBEs in specific trades for a given geographical area of New York State.

This printout can be requested in writing as follows:

- By e-mail to: DCMWBEManager@ogs.ny.gov
- By fax to: (518) 486-2679

- By mail to:

  NYS Office of General Services
  Office of Business Diversity
  29th Floor, Corning Tower, GNARESP
  Albany, NY 12242

24. LIQUIDATED DAMAGES – MWBE PARTICIPATION

24.1 Refer to Article 27.8, Document 007307, Supplementary Conditions - MWBE-EEO, for "Liquidated Damages – MWBE Participation".

END OF DOCUMENT

DOCUMENT 002218

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS - PRE-BID SITE VISIT

This Supplement modifies the Instructions to Bidders. Where any part of the Instructions to Bidders is modified by this supplement, the unaltered provisions of that part shall remain in effect.

2. VISIT TO THE SITE

Change 2.1 to Read:

2.1 Prospective bidders will be allowed to visit the job site to take field measurements and examine existing conditions of the project area only during the pre-bid site visit. Prospective bidders are urged to visit the site at this time. Prospective bidders or their representatives attending the pre-bid site visit will not be admitted on facility grounds without proper photo identification. Parking restrictions and security provisions will apply and vehicles will be subject to search. The date, time, location of the pre-bid site visit, and the phone number are included in the Advertisement for Bids.

Bidders are strongly encouraged to visit the project site to assess project conditions or quality standards.

Phone a minimum of 24 hours in advance of the pre-bid site visit with the names of those who will attend.

All participants shall comply with facility rules and regulations.

Participants will not be allowed to deviate from the group walk-thru and must stay with the group for the duration of the visit. All participants will adhere to the direction given by the Director's Representative at all times during the visit.

Individuals shall not attend the site visit if they are feeling ill.

END OF DOCUMENT

DOCUMENT 002219

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS - QUALIFICATIONS OF BIDDERS AND MANDATORY PRE-AWARD SUBMITTAL REQUIREMENTS

This Supplement modifies the Instructions to Bidders. Where any part of the Instructions to Bidders is modified by this supplement, the unaltered provisions of that part shall remain in effect.

Add the following Articles:

25. QUALIFICATIONS OF BIDDERS

25.1 The Contracting Officer or their representative will schedule a pre-award meeting to consider the bid responsiveness of the bid submitted by the apparent low bidder within fourteen (14) calendar days of the bid opening. Bidders will be notified of the time and place of the meeting. On a case by case basis, the State will examine and evaluate the bid as responsive by considering the contractors understanding of: the overall project scope, estimated cost, utilization of proposed sub-contractors, expertise, workmanship and past performance in completing similar contracts.

25.2 The Contracting Officer or their respective representative will conduct an investigation to determine the responsibility of any Bidder, including the ability of any Bidder to perform the Work. Bidders shall furnish to the Officer all information and data requested, including complete financial data, within the time and in the form and manner requested. The Contracting Officer reserves the right to reject any bid if the evidence required by the Officer is not submitted as requested, or if the evidence submitted by or the investigation of any Bidder fails to satisfy the Contracting Officer that the Bidder is responsible, or is able and qualified to carry out the obligations of the Contract, or to complete the Work as indicated in the Contract Documents, or able to reasonably perform the Work for the Bid Amount.

25.3 The criteria contained in Executive Order No. 170.1 Uniform Guidelines for Determining the Responsibility of Bidders will be applied in the evaluation of Bidders. Special criteria that will be considered in establishing the responsibility of the Bidders shall include, but not be limited to established experience in performing the Work required by the Contract Documents. Experience will be viewed from comparable projects as well as experience and knowledge of construction by the firm's personnel.

26. MANDATORY PRE-AWARD SUBMITTAL REQUIREMENTS

26.1 The apparent low bidder must submit the required pre-award submittal package outlined below to the Regional Supervisor within seven (7) calendar days after the bids are opened.

Regional Supervisor Name: John Pupons
Address: Eleanor Roosevelt State Office Building
4 Burnett Blvd., Suite 309, Poughkeepsie, NY 12603
Phone: (845) 431-5976
Email: Region3preawardsubmittals@ogs.ny.gov

Submissions must be emailed and must include the Project Number of this contract in the Subject Line of the Pre-Award submission email (i.e. OGS PN 12345-C: Pre-Award Submission).

Pre-award Submittal Package:

1. References and Experience:
   a. List of all past contracts with OGS. Include OGS Project Number and date.
   b. Provide three (3) references (Name, Title, and Phone Number) associated with three (3) different projects (OGS, public, or private sector) of similar scope and size to the one identified in this contract. Additionally, include the names of two major suppliers used for each of these three (3) projects.

      Provide a copy of recent past experience as required under the filing of the NYS Vendor Responsibility Questionnaire (CCA-2 document) with the Office of the State Comptroller. Provide only Attachment A: Completed Construction Contracts and Attachment B: Uncompleted Construction Contracts. For additional information, see:

      http://www.osc.state.ny.us/vendrep/form_cca2.htm

2. Workforce and Work Plan – Provide a detailed written Work Plan which shall demonstrate the contractor's understanding of overall project scope and shall include, but not be limited, to the following:
   a. Sequential listing of specific project activities required to successfully complete the Work of the contract.
      1. Include Critical Milestones.
      2. Include phasing of the Work, if required.
      3. Include listing of long lead items.
      4. Impact of weather and restricted work period(s).
      5. Include a list of site-/project-specific safety hazards, and how such hazards will be considered in performance of the Work.
   b. Résumés for Contractor's proposed supervisory staff, including qualifications for specialized expertise or any certification(s) required to perform the Work.
   c. Schedule Preparer qualifications when required by specification 013200.
   d. Submittal Coordinator qualifications when required by specification 013300.
   e. Names of proposed major sub-contractors (more than 15% of the bid amount or where critical systems of work are identified in the contract) and a listing of the related trade of work and value.
   f. Any special coordination requirements with other trades.
   g. Any special storage and staging requirements for construction materials.

3. Detailed Cost Estimate:
   a. A copy of a Detailed Cost Estimate outlined in CSI format.

4. Provide information for any other special requirements at the request of the Director's Representative.

26.2 When requested by the Contracting Officer or their representative, Bidders shall, within the time specified by the Officer, submit to the Officer the names of the Subcontractors the Bidder proposes to use on the project. The Contracting Officer reserves the right to disapprove the use of any proposed Subcontractor. In such an event the Bidder shall submit the name of another Subcontractor in like manner within the time specified by the Officer. The Bidder shall have and will make no claim for compensation if the Contracting Officer disapproves any proposed Subcontractor. The Contracting Officer reserves the right to reject any bid if the names of proposed Subcontractors, or additional subcontract information, are not submitted as required.

END OF DOCUMENT

DOCUMENT 003113

REFERENCE SUMMARY PROJECT SCHEDULE

A Summary Project Schedule has been prepared for this project. Refer to SECTION – 011000.01 SUMMARY OF THE WORK for the required phasing or sequencing of the work as presented on the following pages. This Summary Project Schedule is meant to be used as reference in preparing a bid response for the Work Plan requirement of DOCUMENT 002219 - SUPPLEMENTARY INSTRUCTIONS TO BIDDERS - QUALIFICATIONS OF BIDDERS AND MANDATORY PRE-AWARD SUBMITTAL REQUIREMENTS. It is not intended that these examples limit the Contractor in any way in preparation of a bid response.

NOTE: All information presented in the Summary Project Schedule included in this Document are for reference only.

DOCUMENT 003126

EXISTING HAZARDOUS MATERIAL INFORMATION

1.01 ASBESTOS SURVEY REPORT

Samples listed in the report were collected at the Project Site and tested for Asbestos Containing Materials (ACM). The report was compiled for New York State Office of General Services, Design and Construction Group by an ELAP certified laboratory. In order to determine the Asbestos content, samples were analyzed by polarized light microscopy (PLM) and/or transmission electron microscopy (TEM). The report is intended for the State design and estimate purposes only and is included to provide bidders with that same information available to the State. The Bulk Samples are representative of Homogeneous Area (HA) and is defined as a suspect material of similar age, appearance, function and texture. All field information was organized in accordance with 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA). See the Hazardous Materials Survey Pre-Renovation For Asbestos, Lead-Based Paint and PCB in Caulk and the Renovation Survey For Asbestos-Containing Materials, Lead-Based Paint & PCBs reports included in the Appendix for type, condition, location and approximate quantity of ACM.

1.02 LEAD SURVEY REPORT

Samples listed in the report were collected at the Project Site and tested for Lead content. The report was compiled for New York State Office of General Services, Design and Construction Group by an ELAP certified laboratory. In order to determine the lead content the Atomic Absorption method or a XRF Analyzer was used. This report is intended for State design and estimate purposes only and is included to provide bidders with the same information available to the State. The samples are representative of like materials in the Work area. All lead containing materials may not have been sampled. See the Hazardous Materials Survey Pre-Renovation For Asbestos, Lead-Based Paint and PCB in Caulk and PCB in Caulk and the Renovation Survey For Asbestos-Containing Materials, Lead-Based Paint & PCBs reports included in the Appendix for details.

1.03 PCB SAMPLING REPORT

Samples listed in the report were collected at the Project Site and tested for PCBs. The report was compiled for New York State Office of General Services, Design and Construction Group by an ELAP certified laboratory. Bulk, wipe or air sampling was used in determining the PCB content. This report is intended for State design and estimate purposes only and is included to provide bidders with the same information available to the State. All PCB containing materials may not have been sampled. See the Hazardous Materials Survey Pre-Renovation For Asbestos, Lead-Based Paint and PCB in Caulk and PCB in Caulk and the Renovation Survey For Asbestos-Containing Materials, Lead-Based Paint & PCBs reports included in the Appendix for details.

END OF DOCUMENT

DOCUMENT 003132

GEOTECHNICAL DATA

The subsurface logs included in this Document were made on the dates indicated on the individual logs.

The observed water levels and/or conditions noted on the subsurface logs are as recorded at the time of exploration. These water levels and/or conditions may vary considerably with time, according to the prevailing climate, rainfall, or other factors and are otherwise dependent on the duration of and method used in the explorations program.

Sound engineering judgment was exercised in preparing the subsurface logs. This information was prepared and is intended for State design and estimate purposes only. Its presentation is for the purpose of providing intended users with access to the same information available to the State. These subsurface logs are presented in good faith and are not intended as a substitute for personal investigation, independent interpretations, or judgment of the bidders.

END OF SECTION

DETACH AND USE THIS FORM

BID FORM FOR: 47477-E

ELECTRICAL WORK
RENOVATE ARMORY
STATE ARMORY
2 QUINCY PLACE
YONKERS, NY

State of New York
Office of General Services
Design and Construction Group
Division of Contract Management
35th Floor, Corning Tower
The Gov. Nelson A. Rockefeller
Empire State Plaza
Albany, NY 12242

THIS IS A 4 PAGE BID FORM. ALL PAGES MUST BE COMPLETED.

THE STATE RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS. EACH BID FORM SHALL BE ACCOMPANIED BY BID SECURITY (AS DESCRIBED IN THE INSTRUCTIONS TO BIDDERS) IN THE AMOUNT STATED IN THE ADVERTISEMENT FOR BIDS.

The Undersigned agrees to complete the Work within the time stated in Section 011000 of the Specifications.

The Undersigned acknowledges his/her understanding of the social policy concerning minority and women business participation in the State building construction program, and pledges to cooperate with the State in the implementation of this policy, and further pledges to exert good faith efforts to achieve participation of minority and female employees.

The Undersigned certifies, as to each of the occupations listed in the Prevailing Rate Schedule applicable to this Project, the ability and willingness to exert good faith efforts to achieve the goal for minority and women workforce participation as set forth in the Supplementary Conditions.

The Undersigned certifies the ability and willingness to exert good faith efforts to achieve the goals for Minority and Women-Owned Business Enterprise and Service-Disabled Veteran-Owned Businesses participation as set forth in the Supplementary Conditions.

The Undersigned declares that the Bidding and Contract Documents have been carefully examined and that all things necessary for the completion of the Work shall be provided.

The Undersigned agrees that the bid security shall be subject to forfeiture if this bid is accepted by the State and he/she does not submit executed copies of the Agreement WITHIN FIVE (5) DAYS OF RECEIPT OF A WRITTEN REQUEST TO PROVIDE SUCH AGREEMENT. A Performance Bond and a Labor and Material Bond, each in an amount equal to the contract sum, shall be supplied with the executed Agreement and shall be the statutory form of public bonds required by Sections 136 and 137 of the State Finance Law.

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his/her knowledge and belief:

(1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition as to any matter relating to such prices with any other bidder or with any competitor;

(2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor;

(3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

(4) This contract shall not cause or result in a violation of Section 74(3)(e) of the Public Officers Law which states: "No officer or employee of a state agency, member of the legislature or legislative employee should engage in any transaction as representative or agent of the State with any business entity in which he/she has a direct or indirect financial interest that might reasonably tend to conflict with the proper discharge of his/her official duties."

Federal Employer I.D. No. _____

(5) The Bidder understands and agrees to comply with the requirements of the Procurement Lobbying Law, State Finance Law § 139-j and § 139-k, and with OGS's procedures relating to permissible contacts during a procurement as required by State Finance Law § 139-j(3) and § 139-j(6)(b). Such requirements and procedures are posted at https://ogs.ny.gov/acpl.

(6) The bidder is not on the list created pursuant to paragraph (b) of subdivision 3 of section 165-a of the state finance law (NYS Iran Divestment Act of 2012). The list can be viewed at the following link:

https://ogs.ny.gov/iran-divestment-act-2012

(7) Will New York State Businesses be used in the performance of this contract (refer to Document 007324)?

Yes ☐ No ☐

(8) The New York State Human Rights Law (Human Rights Law), Article 15 of the Executive Law, prohibits discrimination and harassment based on age, race, creed, color, national origin, sex, pregnancy or pregnancy-related conditions, sexual orientation, gender identity, disability, marital status, familial status, domestic violence victim status, prior arrest or conviction record, military status or predisposing genetic characteristics.

The Human Rights Law may also require reasonable accommodation for persons with disabilities and pregnancy-related conditions. A reasonable accommodation is an adjustment to a job or work environment that enables a person with a disability to perform the essential functions of a job in a reasonable manner. The Human Rights Law may also require reasonable accommodation in employment on the basis of Sabbath observance or religious practices.

Generally, the Human Rights Law applies to:

- all employers of four or more people, employment agencies, labor organizations and apprenticeship training programs in all instances of discrimination or harassment;
- employers with fewer than four employees in all cases involving sexual harassment; and,
- any employer of domestic workers in cases involving sexual harassment or harassment based on gender, race, religion or national origin.

In accordance with Executive Order No. 177, the Bidder hereby certifies that it does not have institutional policies or practices that fail to address the harassment and discrimination of individuals on the basis of their age, race, creed, color, national origin, sex, sexual orientation, gender identity, disability, marital status, military status, or other protected status under the Human Rights Law.

Executive Order No. 177 and this certification do not affect institutional policies or practices that are protected by existing law, including but not limited to the First Amendment of the United States Constitution, Article 1, Section 3 of the New York State Constitution, and Section 296(11) of the New York State Human Rights Law.

(9) In accordance with State Finance Law § 139-l, by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all of its employees. Such policy shall, at a minimum, meet the requirements of section two hundred one-g of the labor law.

If the bidder cannot make the foregoing certification, such bidder shall so state and shall furnish with the bid a signed statement that sets forth in detail the reasons that the bidder cannot make the certification.

(10) In accordance with State Finance Law § 139-m, by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing gender-based violence and the workplace and has provided such policy to all of its employees, directors and board members. Such policy shall, at a minimum, meet the requirements of subdivision 11 of section five hundred seventy-five of the executive law.

If the bidder cannot make the foregoing certification, such bidder shall so state and shall furnish with the bid a signed statement that sets forth in detail the reasons that the bidder cannot make the certification.

Federal Employer I.D. No. _____

(11) In accordance with Section 165(5) of the State Finance Law, the bidder, by submission of this bid, certifies that it or any individual or legal entity in which the bidder holds a 10% or greater ownership interest, or any individual or legal entity that holds a 10% or greater ownership interest in the bidder, either (answer yes or no to one or both of the following, as applicable):

1. have business operations in Northern Ireland Yes ☐ No ☐ and if yes:

2. shall take lawful steps in good faith to conduct any business operations in Northern Ireland in accordance with the MacBride Fair Employment Principles relating to nondiscrimination in employment and freedom of workplace opportunity regarding such operations in Northern Ireland, and shall permit independent monitoring of compliance with such principles.

Yes ☐ No ☐

(12) Certification Under Executive Order No. 16 - Prohibiting State Agencies and Authorities from Contracting with Businesses Conducting Business in Russia

Executive Order No. 16 provides that "all Affected State Entities are directed to refrain from entering into any new contract or renewing any existing contract with an entity conducting business operations in Russia." The complete text of Executive Order No. 16 can be found here: https://www.governor.ny.gov/executive-order/no-16-prohibiting-state-agencies-and-authorities-contracting-businesses-conducting

The Executive Order remains in effect while sanctions imposed by the federal government are in effect. Accordingly, vendors who may be excluded from award because of current business operations in Russia are nevertheless encouraged to respond to solicitations to preserve their contracting opportunities in case the sanctions are lifted during a solicitation or even after award in the case of some solicitations.

As defined in Executive Order No. 16, an "entity conducting business operations in Russia" means an institution or company, wherever located, conducting any commercial activity in Russia or transacting business with the Russian Government or which the commercial entities headquartered in Russia or with their principal place of business in Russia in the form of contracting, sales, purchasing, investment, or any business partnership.

Is Vendor an entity conducting business operations in Russia, as defined above? Please answer by checking one of the following boxes:

☐ 1. No, Vendor does not conduct business operations in Russia within the meaning of Executive Order No. 16.

☐ 2.a. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but has taken steps to wind down business operations in Russia or is in the process of winding down business operations in Russia. (Please provide a detailed description of the wind down process and a schedule for completion.)

☐ 2.b. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but only to the extent necessary to provide vital health and safety services within Russia or to comply with federal law, regulations, executive orders, or directives. (Please provide a detailed description of the services being provided or the relevant laws, regulations, etc.)

☐ 3. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16.

(13) In accordance with New York State Labor Law Section 220-i, the bidder certifies that it is registered with the New York State Department of Labor (NYSDOL) for public work projects. By submission of this bid and providing the registration number in the space indicated on this bid form, the bidder affirms that its registration is current and valid as of the date of bid submission.

Federal Employer I.D. No. _____

Addenda to the Contract Documents are available at:
https://online.ogs.ny.gov/dnc/contractorConsultant/esb/ESBPlansAvailableIndex.asp
The Undersigned acknowledges receipt and review of all Addenda to the Contract Documents on the above website, listed by number in the space below:

_____

The Undersigned proposes to perform the Work required for this project in accordance with the Contract Documents for the following amount:

BID AMOUNT

1.	All Work except Allowance(s)	$ _____.00
2.	Allowance(s) (As described in Section 012100)	$ 154,005.00
	Total Bid Amount (Sum of 1. & 2.)	$ _____.00

FEDERAL EMPLOYER I.D. NO. _____

NYSDOL CONTRACTOR REGISTRATION NO. (per NYS LABOR LAW 220-i) _____

Is your firm a NYS-Certified Minority and Women-Owned Business Enterprise (MWBE)? Yes ☐ No ☐

MWBE CERTIFICATION FILE NO. _____

SIGN BID HERE _____
Authorized Signature

PRINT NAME OF SIGNER _____

TITLE OF SIGNER _____

OFFICIAL COMPANY NAME _____

MAILING ADDRESS _____
Street

_____
City State Zip

TELEPHONE NO. _____ FAX NO. _____
Area Code Area Code

E-MAIL ADDRESS _____

*****

Federal Employer I.D. No. _____

FORM OF BID BOND - BID SECURITY
STATE OF NEW YORK
OFFICE OF GENERAL SERVICES - DESIGN & CONSTRUCTION

Sub. 3, Sec. 8 - Public Buildings Law

BE IT KNOWN, That _____

_____
(Name of Contractor)

_____
(Address)

(hereinafter called the "Principal") and _____ a corporation created and existing under the Laws of the State of _____ having its principal office in the City of _____ duly licensed as an insurance company in the State of New York, (hereinafter called the "Surety"), are held and firmly bound unto The People of the State of New York (hereinafter called the "State"), in the full and just sum of $81,600 good and lawful money of the United States of America, for the payment of which said sum of money, well and truly to be made, and done, the Principal binds themselves (himself, herself, itself), their (his, hers, its) heirs, executors and administrators, successors and assigns, and the Surety binds itself, its successors and assigns jointly and severally, firmly by these presents:

WHEREAS, the Principal has submitted to the Office of General Services of the State of New York a proposal for Electrical Work, Renovate Armory, State Armory, 2 Quincy Place, Yonkers, NY

AND

WHEREAS, the Principal intends to file this bond to guarantee that the Principal will execute a contract and furnish performance and labor and material bonds required by the terms of the Principal's proposal.

NOW, THEREFORE, the condition of the foregoing obligation is such, that if the Principal shall promptly submit an executed agreement and furnish performance and labor and material bonds required by the terms of the Principal's proposal, then this obligation shall be null and void, otherwise to remain in full force and virtue.

NOW, THEREFORE, the condition of the foregoing obligation is such that if the Principal fails to promptly submit an executed agreement and furnish performance and labor and material bonds required by the terms of the Principal's proposal, then the Surety itself, its successors and assigns, jointly and severally, shall pay the whole sum of money previously set forth in this document to the State.

IN TESTIMONY WHEREOF, the Principal has hereunto set their (his, hers, its) hand and seal and the Surety has caused this instrument to be signed by its Attorney-in-fact, _____ and its corporate seal to be hereunto affixed.

Signed, sealed and delivered in the presence of:

(Corporate seal
of Principal if a corporation)

_____ (L.S.)

_____ (L.S.)

Principal

_____ Company

(Corporate seal of Surety Co.) _____

_____

Attorney-in-fact

Witness _____

Name

_____

Name

(Acknowledgment by principal, unless it be a corporation)

STATE OF NEW YORK
SS.:
COUNTY OF _____

On this _____ day of _____20_____, before me personally came _____ to me known and known to me to be the person described in and who executed the foregoing instrument, and acknowledged that he/she executed the same.

_____
Notary Public County

(Acknowledgment by principal, if a corporation)

STATE OF NEW YORK
SS.:
COUNTY OF _____

On this _____ day of _____20_____, before me personally came _____ to me known, who being by me duly sworn, did depose and say that he/she resides in _____; that he/she is the _____ of the _____; the corporation described in and which executed the foregoing instrument; that he/she knew the seal of said corporation; that the seal affixed to said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he/she signed his/her name thereto by like order.

_____
Notary Public County

(Acknowledgment by Surety Company)

STATE OF NEW YORK
SS.:
COUNTY OF _____

On this _____ day of _____ 20_____, before me personally came _____ to me known, who being by me duly sworn, did depose and say that he/she resides in _____; that he/she is the _____ of the _____; the corporation described in and which executed the within instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that is was so affixed by order of the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order.

_____
Notary Public County

Empire State Development

NEW YORK STATE'S SURETY BOND

Assistance Program Helps Small Business Contractors Secure Surety Bonding

What is the NYS Surety Bond Assistance Program?

The NYS Surety Bond Assistance Program (NYSBAP) provides technical and financial assistance to help contractors secure surety bonding. Contractors may be eligible to receive a guarantee of up to 30% to secure a surety bond line, bid bond or a performance and payment bond on state projects.

How does the NYS Surety Bond Assistance Program work?

To apply for financial assistance, small business contractors should review eligibility requirements and fill out a pre-application assessment available at the Empire State Development (ESD) website.

If the assessment indicates you are eligible to submit an application, proceed with the Application and submit the required forms.

Guarantees of up to 30% on a bond line or individual contract bid bonds and payment/performance bonds are available from Empire State Development. Being eligible for this program does not automatically ensure bonding. Approval is based on both underwriting by a surety company and ESD's credit assessment. Participating surety companies will make a credit determination in accordance with their internal underwriting standards.

Small businesses can also enroll to receive training and technical support on how to become bond-ready by using the Contact Information below. The classroom training is held throughout New York State.

Who is eligible?

- Applicant must be a NYS small business or MWBE with at least two years of business operation.
- Maximum bond line or project size is $2 million
- Minimum average gross revenue of $400,000 in the last two fiscal or calendar years and maximum gross revenue not to exceed $5 million in the most recent calendar or fiscal year.
- Minimum credit score of 600.
- Previous experience completing similar work to the contract opportunity being pursued.

Find Out More

If interested in training or financial support, please visit ESD's website:
http://esd.ny.gov/BusinessPrograms/BondingAssistance.html

For additional inquiries, please contact:
Ms. Huey-Min Chuang
Senior Director of Business & Economic Development
212-803-3238
BAP@esd.ny.gov

Offerer Disclosure of Prior Non-Responsibility Determinations

See instructions on next page before completing this form.

Name of Individual or Entity Seeking to Enter into the Procurement Contract:

_____

Address: _____

_____

Name and Title of Person Submitting this Form: _____

_____

Contract Procurement Number: _____ Date: _____

1. Has any Governmental Entity made a finding of non-responsibility regarding the individual or entity seeking to enter into the Procurement Contract in the previous four years? (Please circle):

No Yes

If yes, please answer the next questions:

2. Was the basis for the finding of non-responsibility due to a violation of State Finance Law §139-j (Please circle):

No Yes

3. Was the basis for the finding of non-responsibility due to the intentional provision of false or incomplete information to a Governmental Entity? (Please circle):

No Yes

4. If you answered yes to any of the above questions, please provide details regarding the finding of non-responsibility below and attach additional pages as necessary.

Governmental Entity: _____

Date of Finding of Non-responsibility: _____

Basis of Finding of Non-Responsibility: _____

5. Has any Governmental Entity or other governmental agency terminated or withheld a Procurement Contract with the above-named individual or entity due to the intentional provision of false or incomplete information? (Please circle):

No Yes

6. If yes, please provide details below and attach additional pages as necessary.

Governmental Entity: _____

Date of Termination or Withholding of Contract: _____

Basis of Termination or Withholding: _____

Offerer certifies that all information provided to the Governmental Entity with respect to State Finance Law §139-k is complete, true and accurate.

By: _____ Date: _____

Signature

Instructions for Completing the DCA-3

Offerer Disclosure of Prior Non-Responsibility Determinations

Background:

New York State Finance Law §139-k(2) obligates a Governmental Entity to obtain specific information regarding prior non-responsibility determinations with respect to State Finance Law §139-j. This information must be collected in addition to the information that is separately obtained pursuant to State Finance Law §163(9). In accordance with State Finance Law §139-k, an Offerer must be asked to disclose whether there has been a finding of non-responsibility made within the previous four (4) years by any Governmental Entity due to: (a) a violation of State Finance Law §139-j or (b) the intentional provision of false or incomplete information to a Governmental Entity. The terms "Offerer" and "Governmental Entity" are defined in State Finance Law § 139-k(1). State Finance Law §139-j sets forth detailed requirements about the restrictions on Contacts during the procurement process. A violation of State Finance Law §139-j includes, but is not limited to, an impermissible Contact during the restricted period (for example, contacting a person or entity other than the designated contact person, when such contact does not fall within one of the exemptions).

As part of its responsibility determination, State Finance Law §139-k(3) mandates consideration of whether an Offerer fails to timely disclose accurate or complete information regarding the above non-responsibility determination. In accordance with law, no Procurement Contract shall be awarded to any Offerer that fails to timely disclose accurate or complete information under this section, unless a finding is made that the award of the Procurement Contract to the Offerer is necessary to protect public property or public health safety, and that the Offerer is the only source capable of supplying the required Article of Procurement within the necessary timeframe. See State Finance Law §§139-j (10)(b) and 139-k(3).

Instructions:

OGS Design and Construction includes this disclosure request regarding prior non-responsibility determinations in accordance with State Finance Law §139-k in its solicitation of proposals or bid documents or specifications or contract documents, as applicable, for procurement contracts. The attached form is to be completed and submitted by the individual or entity seeking to enter into a Procurement Contract, Supplement or Change Order. It shall be submitted to the OGS Design and Construction unit conducting the Governmental Procurement.

This document must accompany each Bid Form, Letter of Interest, or Proposal submitted by an offerer and will be required for any contract amendments over $15,000. This document must also accompany each Emergency Contract Bid Form.

STATE OF NEW YORK - EXECUTIVE DEPARTMENT

OFFICE OF GENERAL SERVICES - DESIGN & CONSTRUCTION GROUP

DOCUMENT 007213
GENERAL CONDITIONS
AUGUST 2010 EDITION

TABLE OF ARTICLES

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STANDARD CLAUSES FOR ALL NEW YORK STATE CONTRACTS - APPENDIX A 20

STANDARD CLAUSE FOR CONTRACTOR DEFAULT AND SURETY TAKEOVER - APPENDIX B 28

(Appendix A revised 06/2023)
(Articles 5, 10 and 21 revised in 01/2011)
(Article 23 corrected in 02/2017)

ARTICLE 1 - THE CONTRACT DOCUMENTS

1.1 The Contract Documents consist of the Agreement, the Performance and Payment Bonds, the General Conditions, the Supplementary Conditions, Appendix A, the Drawings and Specifications, Addenda issued prior to the receipt of bids and all subsequent modifications and changes issued pursuant to the General Conditions.

1.1.1 The Performance and Payment Bonds are not a part of Single Trade Contract less than two hundred thousand dollars.

1.2 The Contract Documents form the Contract. The Contract represents the entire and integrated agreement between the parties and supersedes all prior negotiations, representations and agreements, either written or oral including the bidding documents.

1.3 The Contract may not be modified except in accordance with the General Conditions.

1.4 The project is designed in accordance with the Building Codes of New York State and its reference standards. In no instance shall the Contractor deviate from the contract documents except as provided for in the contract. The Contractor shall notify the State of any deviations or conflicts observed that may violate the Building Codes.

ARTICLE 2 - DEFINITIONS

2.1 The following terms shall have the meanings ascribed to them in this Article, wherever they appear in the Contract Documents.

2.2 The term “Agency” means the officer, board, department, commission, authority, fund or public benefit corporation executing the Agreement.

2.3 The term “Commissioner” means the Commissioner of General Services.

2.4 The term “Comptroller” means the Comptroller of the State of New York.

2.5 The term “Contracting Officer” means the Director of Contract Administration of the Design and Construction Group of the Office of General Services or his representative designated in writing.

2.6 The term “Contractor” means the person, firm or corporation executing the Agreement or the successor or assignee of the Contractor approved in writing by the Contracting Officer. If the text requires, the term includes the person, firm or corporation executing any Agreement in furtherance of the Project or the successors or assigns approved in writing by the Contracting Officer.

2.7 The term “days” means calendar days.

2.8 The term “Director” means the Director of Construction of the Design and Construction Group of the Office of General Services who will have general direction and supervision of the Work.

2.9 The term “Director’s Representative” means the employee or agent of the Design and Construction Group designated in writing by the Director as such. Under the general supervision of the Director, the Director’s Representative shall have complete charge of the Work and shall exercise full supervision and direction of the Work. Where the Contract Documents specifically designate a person to perform a function or duty, that person shall be the Director’s Representative but only for the performance of that function or duty. Where the word “directed” appears in the Contract Documents, the words “by the Director’s Representative” shall be deemed inserted thereafter in each case except where it is obviously inappropriate in context.

2.10 The term “Group Director” means the Deputy Commissioner for Design and Construction, Office of General Services.

2.11 The term “liquidated damages” means the amount of money to be assessed against the Contractor for delay in physical completion of the Work.

2.12 The term “physical completion” means the date upon which the Director’s Representative certifies that all deficiencies noted on the Final Inspection List have been corrected and is evidenced by issuance of the Physical Completion Report.

2.13 The term “premises” means all land, buildings, structures and all other things of any kind located on or adjacent to the Site and owned, occupied or otherwise used by the State.

2.14 The term “product data” means manufacturer’s catalog sheets, brochures, standard diagrams, illustrations, schedules, performance charts, test data, standard schematic drawings, specifications and installation instructions.

2.15 The term “Project” means Work at the same Site carried out pursuant to one or more sets of Contract Documents.

2.16 The term “provide” means furnish and install complete, in place and ready for operation and use.

2.17 The term “sample” means physical examples submitted by the Contractor of materials, equipment or workmanship to establish a standard which the Contractor is required to meet and to show the quality, type, range of color, finish, and texture of the material intended to be furnished for the Work.

2.18 The term “shop drawing” means an original drawing prepared by a Contractor, subcontractor, supplier or distributor which illustrates some portion of the Work showing fabrication, layout, fitting or erection details.

2.19 The term “Site” means the area within the contract limit, as indicated by the Contract Documents, including all land, buildings, structures and other things located within those limits.

2.20 The term “State” means the State of New York.

2.21 The term “substantial completion” means that the Work or major milestones there of as contemplated by the terms of this contract are sufficiently complete so that the Work can be used for the purpose for which it is intended.

2.22 The term “Work” means all that which is required of the Contractor by the Contract Documents including labor, materials, tools and equipment.

2.23 The term “Offerer” shall mean the individual or entity, or any employee, agent, consultant or person acting on behalf of such individual or entity that contacts a governmental entity about a governmental procurement during the restricted period of such governmental procurement.

ARTICLE 3 - INTERPRETATION OF CONTRACT DOCUMENTS

3.1 The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. It is not intended to include work not properly inferable from the Contract Documents.

3.2 Upon the Contractor’s written request, the Director’s Representative may issue written interpretation or drawings necessary for the proper execution or progress of the Work which interpretation shall be consistent with and reasonably inferable from the Contract Documents.

3.3 The language of the Contract Documents is directed at the Contractor unless specifically stated otherwise.

3.4 The organization of the Specifications into divisions, sections and articles, and the arrangement of Drawings shall not control the Contractor in dividing the Work among subcontractors or in establishing the extent of Work to be performed by any trade.

3.5 In the event of conflicting provisions in the Contract Documents, the drawings will take precedence over the specifications.

3.6 In the event of conflicting provisions within the drawings, the following order of precedence for resolution of the conflict shall apply: the more specific provision will take precedence over the less specific; if not resolved, the less stringent will take precedence over the more stringent; if not resolved, the less expensive item will take precedence over the more expensive. On all drawings, figures take precedence over scaled dimensions.

3.7 In the event of conflicting provisions within the specifications, the following order of precedence for resolution of the conflict shall apply: the more specific provision will take precedence over the less specific; if not resolved, the less stringent will take precedence over the more stringent; if not resolved, the less expensive item will take precedence over the more expensive.

3.8 If during the performance of the work, the Contractor identifies a conflict in the Contract Documents; the Contractor shall promptly notify the Director’s Representative in writing of the conflict and advise as to the course of action the Contractor proposes to follow. The Director’s Representative shall promptly acknowledge the notification in writing and advise the Contractor, pursuant to Paragraph 3.2 of these General Conditions, as to the interpretation to be followed in the performance of the Work.

ARTICLE 4 - SUBMITTALS

4.1 The Contractor and the Director shall adhere to the submittal and scheduling requirements specified in Division 01 - General Requirements.

4.2 The Contractor shall approve all submittals before submitting them. By such approval, the Contractor represents that it has determined and verified field measurements, field construction criteria, materials, catalog numbers, and similar data and that it has checked and coordinated shop drawings, product data and samples with the requirements of the Contract Documents and that it has verified the completeness, correctness, and accuracy of the submittal.

4.3 The Director’s approval of shop drawings, product data and samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has previously informed the Director of any anticipated deviation utilizing the required deviation request form,

(available at the OGS D&C website),at the time of submission. Written approval of the specific deviations as outlined on the request form shall be required. The Director's approval shall not relieve the Contractor from responsibility for errors or omissions in the shop drawings, product data or samples.

4.4 Portions of the Work requiring shop drawings, product data, quality assurance information, or sample submittals shall not be commenced until the appropriate submittals have been approved by the Director.

4.5 The Contractor shall deliver to the Director, in the detail and form and at the time the Director shall require, information concerning the Contractor's operations and proposed operations upon the Project all in accordance with Division 01 - General Requirements.

4.6 During the term of this Project, the Director may require any Contractor to modify any schedules which it has submitted either before or after they are approved so that the Work of any contract in furtherance of the Project may be properly progressed and so that changes in the Work or the work of related contracts is properly reflected in the schedules.

4.7 Where indicated under the specific submittal requirements of the specifications, a re-evaluation fee of $250.00 will be assessed against the Contractor for each re-evaluation required of any submittal package that is deemed incomplete, or lacking appropriate content or required format as required by the individual specification section.

ARTICLE 5 - MATERIALS AND LABOR

5.1 All materials, equipment and articles used permanently in the Work which become the property of the State shall be new unless specifically stated otherwise.

5.2 Asbestos Free Materials: All materials used for construction shall be free of asbestos containing materials unless the materials containing the asbestos have been previously approved for use by the State. If asbestos is found in installed products not previously approved by the State, then it will be the responsibility of the contractor to abate the asbestos containing material and replace the work with new asbestos free materials at no cost to the State of New York in compliance with the requirements of the contract.

5.3 Except where specifically provided otherwise, whenever any product is specified by brand name, i.e., manufacturer's or supplier's name or trade name and catalog or model number or name, the intent is not to limit competition but to establish a standard of quality which the Director has determined is necessary. The words "or equal" shall be deemed inserted in each instance. The Contractor may use any product equal to that named in the Contract Documents which is approved by the Director and which meets the requirements of the Contract Documents providing the Contractor gives timely notice of the Contractor's intent in accordance with the submittal and scheduling requirements of Division 01 - General Requirements.

5.4 The Contractor shall have the burden of proving at the Contractor's own cost and expense, to the satisfaction of the Director, that the proposed product is equal to the named product. The Director may establish criteria for product approval. The Director shall determine with absolute discretion whether a proposed product is to be approved.

5.5 If the Contractor fails to comply with the provisions of this Article, or if the Director determines that the proposed product is not equal to that named, the Contractor shall supply the product named.

5.6 The Contractor shall have and make no claim for the extension of time or for damages because the Director requires a reasonable period of time to consider a product proposed by the Contractor or because the Director disapproves such a product.

5.7 Where optional materials or methods are specified, or where "or equal" submissions are approved, the Contractor shall make all adjustments to contingent Work, whether the contingent Work be the Work of its contract or the Work of other Contractor's, necessary to accommodate the option or "or equal" product it selects without extra or additional cost.

5.8 Royalties and Patents: The Contractor shall pay all royalties and license fees. The Contractor shall defend all suits or claims for infringement of any patent rights and shall save the State harmless from loss on account thereof, except that the State shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer is specified.

ARTICLE 6 - CONTRACTOR'S SUPERVISION

6.1 The Contractor shall designate in writing competent supervision and/or management representatives as required below to represent the Contractor at all times with authority to act for the Contractor. All Direction given to the Contractor's Representatives shall be as binding as if given to the Contractor. A Superintendent or Project Manager shall be classified as management representatives included in the Contractor's overhead and shall perform management, supervisory and/or administrative tasks (non labor) only. Individuals listed under this Article shall have the ability to effectively communicate (verbal and written) with all parties associated with the administration/supervision of this contract.

6.1.1 For contracts valued up to $500,000 the contractor shall provide a supervisor for the Contractor's staff who shall be in attendance at the site throughout the active performance of the Work.

6.1.2 For contracts valued from $500,000 to $2,000,000 the Contractor shall provide a Superintendent for the Contractor's staff who shall be in attendance at the site throughout the active performance of the Work until Substantial Completion. Upon Substantial Completion the contractor shall provide a supervisor who shall be in attendance at the site throughout the active performance of the Work until Physical Completion. The Superintendent shall have the authority to direct and schedule the Work, shall attend all project meetings, shall coordinate the Work of subcontractors, and make purchase and cost decisions on behalf of the Contractor.

6.1.3 For contracts valued from $2,000,001 to $5,000,000 the contractor shall provide a Superintendent for the Contractor's staff who shall be in attendance at the site throughout the active performance of the Work until Substantial Completion. Upon Substantial Completion the contractor shall provide a supervisor who shall be in attendance at the site throughout the active performance of the Work until Physical Completion. The Superintendent shall have the authority to direct the Work, attend all project meetings, and coordinate the Work of subcontractors. The Contractor shall also provide a Project Manager who shall attend project meetings, maintain submittal and approval system, and be responsible for change order/field order responses and negotiations. The Contractor shall provide required information to the Director's Representative for the Project Schedule.

6.1.4 For contracts valued from $5,000,001 to $10,000,000 the contractor shall provide a Project Manager and Superintendent for the Contractor's staff that shall be in attendance at the site throughout the active performance of the Work until Substantial Completion. Upon Substantial Completion the contractor shall provide a supervisor who shall be in attendance at the site throughout the active performance of the Work until Physical Completion. The Superintendent shall have the authority to direct the Work, and coordinate the Work of subcontractors. The Project Manager shall attend project meetings, maintain the project schedule, maintain submittal and approval system, and be responsible for change order/field order responses and negotiations.

6.1.5 For contracts valued for more than $10,000,000 the contractor shall provide a Project Manager and Superintendent for the Contractor's staff who shall be in attendance at the site throughout the active performance of the Work until Substantial Completion. Upon Substantial Completion the contractor shall provide a supervisor who shall be in attendance at the site throughout the active performance of the Work until Physical Completion. The Superintendent shall have the authority to direct the Work, attend all project meetings, and coordinate the Work of subcontractors. The Project Manager shall attend project meetings, maintain the project schedule, maintain submittal and approval system, and be responsible for change order/field order responses and negotiations. If at any time there are more than five subcontractors performing work on the site simultaneously an additional Superintendent is required coordinate their Work.

6.2 Should the Director deem any employees of the Contractor incompetent or negligent or for any cause unfit for their duty, the Contractor shall dismiss them and they shall not again be employed on the Work.

6.3 Before any part of the Contract shall be sublet or material purchased, the Contractor shall submit to the Director in writing the name of each proposed subcontractor and supplier and obtain the Director's written consent to such subcontractor and supplier. The names shall be submitted in ample time to permit acceptance or rejection of each proposed subcontractor and supplier by the Director or Contracting Officer without causing delay in the work of the Project. The Contractor shall promptly furnish such information as the Director or Contracting Officer may require concerning the proposed subcontractor's and supplier's ability and qualifications, and Minority/Women Owned Business Enterprises Status. Each request for approval of a subcontractor whose subcontract will be valued at $10,000.00 or more shall also be accompanied by a NYS Vendor Responsibility Questionnaire - For-Profit Construction properly completed and executed by the proposed subcontractor.

6.4 The Contractor's use of subcontractors shall not diminish the Contractor's obligations to complete the Work in accordance with the Contract. The Contractor shall control and coordinate the Work of its subcontractors.

6.5 The Contractor shall be responsible for informing its subcontractors and suppliers of all the terms, conditions and requirements of the Contract Documents including, but not limited to the General Conditions, Supplementary Conditions, the Drawings and Specifications, Appendix A, and changes made by Addenda.

ARTICLE 7 - USE OF PREMISES

7.1 If the Premises are occupied, the Contractor, its subcontractors, and their employees shall comply with the regulations governing access to, operation of, and conduct while in or on the Premises and shall perform

the Work in such a manner as not to unreasonably interrupt or interfere with the conduct of business.

7.2 Any request received by the Contractor from any source other than the Director or the Director's Representative to change the Work or its sequence shall be referred to the Director's Representative for determination.

7.3 The Contractor, its subcontractors and their employees shall not have access to or be admitted to any area of the Premises outside the Site except with the written permission of the Director's Representative.

ARTICLE 8 - PERMITS AND COMPLIANCE

8.1 The Contractor shall obtain, maintain and pay for all permits and licenses legally required and shall give all notices, pay all fees and comply with all laws, rules and regulations applicable to the Work at no additional cost.

ARTICLE 9 - INSPECTION AND ACCEPTANCE

9.1 The Director's Representative will inspect and test the Work at reasonable times at the Site, unless the Director determines to make an inspection or test at a place of production, manufacture or shipment. Such inspection or test shall be conclusive as to whether the material and workmanship inspected or tested conforms to the requirements of the Contract. Such inspection or test shall not relieve the Contractor of responsibility for damage to or loss of the material prior to acceptance, nor in any way affect the continuing rights of the Director to reject the completed Work.

9.2 The Contractor shall, without charge, promptly correct any Work the Director's Representative finds does not conform to the Contract Documents unless in the public interest the Director consents to accept such Work with an appropriate adjustment on the Contract sum and/or to any terms and conditions of the Contract. The Contractor shall promptly remove rejected material from the Premises.

9.3 If the Contractor does not promptly correct rejected Work including the work of other sub-contractors destroyed or damaged by removal, replacement, or correction, the Director may (1) correct such Work and charge the cost thereof to the Contractor; or (2) terminate the Contract in accordance with Article 13 of the General Conditions.

9.4 The Contractor shall furnish promptly without additional charge all facilities, labor, material and equipment reasonably needed to perform in a safe and convenient manner such inspections and tests as the Director's Representative requires.

9.5 The Contractor shall keep the Director's Representative informed of the progress of the Contractor's Work and particularly when the Contractor intends to cover Work not yet inspected or tested. All inspection and tests by the Director's Representative shall be performed in such manner as not to unreasonably delay the Work.

9.5.1 The Contractor shall be responsible for all required tests and appropriate test schedules, approvals and inspections pursuant to the Contract Documents.

9.5.2 The Contractor shall be back-charged with any cost of inspection when the Work is not ready at the time specified by the Director's Representative for inspection, or for deficient work that shall require re-testing.

9.6 Should the Director's Representative determine at any time before acceptance of the entire Work to examine Work already completed by removing, uncovering or testing the same, the Contractor shall, on request, promptly furnish all necessary facilities, labor, materials and equipment to conduct such inspection, examination or test. If such Work is found to be defective or nonconforming in any material respect, the Contractor shall defray all the expenses of such examination and satisfactory reconstruction. If the Work is found to meet the requirements of the Contract Documents, the Contractor shall be compensated for the additional services involved in such examination and reconstruction by order on contract and, if completion of the Work has been delayed thereby, shall receive a suitable extension of time.

9.7 No previous inspection or certificates of payment shall relieve the Contractor from the obligation to perform the Work in accordance with the Contract Documents. The final payment shall not relieve the Contractor of the responsibility for failing to comply with the Contract Documents.

9.8 The Contractor shall remedy all defects, paying the cost of any damage to other work or property of the State resulting there from, which shall appear within a period of one year from the date of physical completion.

9.9 Contractor warrants that Product(s) furnished pursuant to this Contract shall, when used in accordance with the Product documentation, be able to accurately process date/time data (including, but not limited to, calculating, comparing, and sequencing) transitions, including leap year calculations. Where a Contractor proposes or an acquisition requires that specific Products must perform as a package or system, this warranty shall apply to the Products as a system.

9.9.1 Where Contractor is providing ongoing services, including but not limited to: i) consulting, integration, code or data conversion, ii) maintenance or support services, iii) data entry or processing, or iv) contract administration services (e.g. billing, invoicing, claim processing), Contractor warrants that services shall be provided in an accurate and timely manner without interruption, failure or error due to the inaccuracy of Contractor's business operations in processing date/time data (including, but not limited to, calculating, comparing, and sequencing) various date/time transitions, including leap year calculations. Contractor shall be responsible for damages resulting from any delays, errors or untimely performance resulting there from, including but not limited to the failure or untimely performance of such services.

9.9.2 This Date/Time Warranty shall survive beyond termination or expiration of this contract through: a) ninety (90) days or b) the Contractor's or Product manufacturer/developer's stated date/time warranty term, whichever is longer. Nothing in this warranty statement shall be construed to limit any rights or remedies otherwise available under this Contract for breach of warranty.

ARTICLE 10 - ORDERS ON CONTRACT (CHANGE ORDERS)

10.1 The State may make changes by altering, adding to or deleting from the Work, and adjusting the Contract sum accordingly. All changed Work shall be executed in conformity with the terms and conditions of the Contract Documents unless otherwise provided in the order on contract. Any change in the Contract sum or time for completion of the described work of the order on contract shall be contained in the order on contract. Any change in schedule resulting from an order on contract will be issued in accordance with the provisions of Paragraphs 4.6 and 13.5 of these General Conditions.

10.2 No written or oral instructions shall be construed as directing a change in the Work unless in the form of an order on contract signed by the Contracting Officer. The order on contract shall describe or enumerate the Work to be performed, state the amount (if any) to be added to or deducted from the Contract sum and state the time allowed (if any) for the performance of the changed work. If the extent or cost of the Work is not determinable until after the changed Work is performed, the order on contract shall specify the method for determining the cost and extent of the changed Work when completed. If the Contractor disagrees as to any element of the order on contract, the Contractor shall promptly indicate such disagreement in writing by certified mail directed to the Contracting Officer and shall promptly proceed in accordance with the order on contract. The Contractor's letter of disagreement shall identify by number the order on contract with which the Contractor is disagreeing, the elements with which the Contractor disagrees and a statement as to why there is a disagreement on each element. The letter of disagreement shall be accompanied by documentation of every material element of the Contractor's basis for disagreement. The Contracting Officer shall promptly review the Contractor's letter and supporting documentation and advise the Contractor in writing of any modifications to the order on contract or of the confirmation of the order on contract as issued. The Contracting Officer may, in the exercise of discretion, conduct informal discussions or meetings with the Contractor and/or State Officials, employees or agents prior to rendering a decision.

10.3 If the Contractor is required to perform Work for which the Contractor believes it is entitled to an order on contract, the Contractor shall give the Director prompt written notice and await instructions before proceeding to execute such Work. The Contractor shall thereafter proceed diligently with the performance of the contract in accordance with the Director's instructions. The Contractor shall maintain complete cost records including but not limited to time and payroll records, material invoices and delivery tickets, equipment rental and purchase invoices for itself and all subcontractors, suppliers and material-men when the Contractor performs work which the Contractor believes is extra or additional work. Failure to maintain such records shall waive any right to extra and additional costs beyond those costs supported by actual cost records.

10.4 The Contracting Officer shall determine the value of any order on contract by one or more of the methods provided in Division 01 - General Requirements.

10.5 Irrespective of the method used or to be used by the State in determining the value of a change order, the Contractor shall after receipt of a request, promptly submit to the State a detailed breakdown of the Contractor's estimate of the value of the omitted or extra work. The Contractor shall submit evidence, satisfactory to the Contracting Officer, to substantiate each and every item that constitutes his proposal for the change. The State shall promptly respond to such submission.

10.5.1 The contractor shall submit a responsive cost proposal to the Director's Representative in proper form subject to the provisions of this Article. The contractor shall respond no later than 30 days from the date of a "request for proposal" from the Director's Representative. Should the contractor fail to respond or submit the required cost proposal within the 30 day requirement, the State shall determine a fair market value for the work proposed and will issue an order on contract or field order to the contract. The Contractor, by failing to respond or provide an acceptable proposal; waives any claim or rights to any extra and or additional costs as determined by the Contracting Officer.

10.6 Unless otherwise specifically provided for in a change order, the compensation specified therein for extra work includes full payment for both the extra work covered thereby and for any damage or expense caused the Contractor by any delays to other work to be done under the Contract resulting from or on account of said extra work, and the Contractor waives all rights to any other compensation for said extra work, damage or expense.

10.7 No order on contract which creates a liability on the State shall be binding unless approved by the Office of the State Comptroller.

ARTICLE 11 - SITE CONDITIONS

11.1 If the Contractor encounters subsurface or other latent physical conditions at the Site which differ substantially from those shown, described or indicated in such information provided by the State or from any information which is a public record and which subsurface or other latent physical condition could not have been reasonably anticipated from that information or from the Contractor's own inspection and examination of the Site, the Contractor shall give immediate written notice to the Director before any such condition is disturbed. The Director shall promptly investigate and, if it is determined that the conditions substantially differ from those which should have been reasonably anticipated, shall make such changes in the Drawings and Specifications as may be required. If necessary, the Contract sum and completion date shall be adjusted, to reflect any increase or decrease in the cost of, or time required for, performance of the Contract.

ARTICLE 12 - SUSPENSION OF WORK

12.1 The Director may order the Contractor in writing to suspend, delay, or interrupt performance of all or any part of the Work for a reasonable period of time as the Director may determine.

12.2 Upon receipt of a suspension order, the Contractor shall, as soon as practicable, cease performance of the Work as ordered and take immediate affirmative measures to protect such Work from loss or damage.

12.3 The Contractor specifically agrees that a suspension, interruption or delay of the performance of the Work pursuant to this Article for a period or periods not exceeding thirty days in total shall not increase the cost of performance of the Work of this Contract other than costs directly related to demobilization and remobilization for the Work, temporary services costs, equipment rental which cannot be practically suspended and temporary protection measures which are unusual but necessary.

ARTICLE 13 - TIME OF COMPLETION AND TERMINATION FOR CAUSE

13.1 All time limits stated in the Contract are of the essence of the Contract.

13.2 Termination for Cause.

13.2.1 If in the judgment of the Group Director, the Contractor fails or refuses to prosecute the Work in accordance with the Contract, or is failing to complete the Work within the time provided by the Contract, the Group Director may terminate the Contract by written notice. In such event, the Group Director shall order the surety to complete the Work.

13.2.2 If it is determined after the award of the contract that there exists any cause of so serious or compelling a nature, including but not limited to, submission to a contracting agency of a false or misleading statement on a NYS Vendor Responsibility Questionnaire, or in some other form in connection with a bid for or award of this or any other contract or a request for approval of a subcontractor, that it raises questions about the present responsibility of a contractor or subcontractor, the Group Director may terminate the Contract by written notice. In such event, the Group Director may or may not in his sole discretion, order the surety to complete the Work.

13.2.3 The Director will notify the Contractor and Surety that the State is considering declaring the Contractor in default and will arrange a hearing with the Contractor and the Surety to discuss methods of performing and completing the contract work.

13.2.4 If the State formally declares the contractor in default the State will demand upon the Surety to complete any and all remaining work pursuant to the terms of the Contract and the Surety Takeover Guidelines incorporated as Appendix B. The Surety may undertake to perform and complete the work itself, through its agents or through independent contractors approved by the State. The State will agree to pay the balance of the Contract price to the Surety in accordance with the terms and conditions of the Contract or to the designee authorized in writing by the surety upon acceptance of the Surety's completion plan pursuant to Appendix B. incorporated herein.

13.2.5 The surety agrees to complete any investigation into the default of the Contractor and advise the Group Director as to its intended course of action within ten days of receipt of the written notice of default. That notice will detail the underlying reasons for the default and provide pertinent documentation including the surety takeover guidelines of the Contracting Officer. Any request by a surety for execution of a takeover agreement, shall be delivered to

the Contracting Officer for consideration, within the same ten day period. No changes in the terms and conditions of the Contract will be considered. All rights remedies and defenses of the parties are reserved and no rights, remedies or defenses of the parties are waived, by virtue of the surety's agreement to assume contract performance under the bond

13.2.6 The Surety may elect to forfeit the remaining penal sum of the Performance Bond within twenty days of notification of default by the State; with no additional penalties imposed, upon the execution of a release prepared by the State. The State will determine the value of the remaining Work based upon its investigation of the Work in place against payments previously authorized. As soon as practical the Surety will tender payment therefore to the State.

13.2.7 If the surety fails or refuses to complete the Work within twenty five days of the notification of the contractors default or if the Surety fails or refuses to complete the work within the time frames allotted by the State, the Group Director may take over the Work and prosecute it to completion by contract publicly let or otherwise, and may take possession of and utilize in completing the Work, such of the Contractor's materials, equipment and plant as may be on the Site of the Work. Whether or not the right to terminate is exercised, the Contractor and the Surety shall be liable for any damage to the State resulting from the failure or refusal to complete the Work in accordance with the Contract or the failure to complete the Work within the time provided by the Contract.

13.2.8 Should the Surety fail to commence the work the Group Director will notify the Surety that the State is considering declaring the Surety in default and will arrange a hearing with the Surety to discuss methods of performing and completing the contract work. It is the policy of the Office of General Services, Design and Construction Group to let a Contract for the remaining work after the 21st day of the demand upon the Surety to complete the Work pursuant to the terms and conditions of the Contract, and the Performance Bond filed with the Office of the State Comptroller.

13.3 The amount of Liquidated Damages shall be the product of $1,000.00 times the number of days of delay in physical completion of the work. Upon the assessment of such damages the State may withhold the sum of the damages contemplated from payments to avoid an overpayment to any firm where damages would apply.

13.3.1 If the Group Director terminates the Contract, damages shall consist of liquidated damages, if any, until the Work is physically completed, plus any increased costs occasioned the State in completing the Work.

13.3.2 If the Group Director does not terminate the Contract, the damages shall consist of liquidated damages, if any, until the Work is physically completed.

13.4 The Contract shall not be so terminated nor the Contractor charged with resulting damage if:

13.4.1 The delay in the completion of the Work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, acts of the public enemy, acts of the State in either its sovereign or contractual capacity, acts of another contractor in the performance of a contract with the State, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, or delays of subcontractors or suppliers arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and such subcontractors or suppliers, and

13.4.2 The Contractor notifies the Director in writing of the causes of delay within ten days from when the Contractor knew or ought to have known of any such delay.

13.5 The Director will ascertain the facts and the extent of the delay and extend the time for completing the Work when, in the Director's judgment, the findings of fact justify such an extension, and the Director's findings of fact shall be final and conclusive on the parties.

13.6 If after notice of termination of the Contract, it is determined for any reason the Contractor was not in default or that the delay was excusable, the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to the termination for convenience clause.

13.7 The rights and remedies of the State provided in this Article are in addition to any other rights and remedies provided by law or under this Contract.

13.8 The State, as defined in Article 2 of these General Conditions, reserves the right to terminate this contract in the event it is found that the certification filed by the offerer in accordance with New York State Finance Law §139-k was intentionally false or intentionally incomplete. Upon such finding, the Governmental Entity may exercise its termination right by providing written notification to the offerer in accordance with the written notification terms of the contract.

ARTICLE 14 - TERMINATION OF CONTRACTOR'S EMPLOYMENT FOR THE CONVENIENCE OF THE STATE OF NEW YORK

14.1 The Group Director may terminate this Contract whenever the public interest so requires by delivering to the Contractor a notice of termination specifying the extent to which performance of Work under the Contract is terminated and the date upon which such termination becomes effective. Upon receipt of the notice of termination, the Contractor shall act promptly to minimize the expenses resulting from such termination. The State shall pay the Contractor the sum of:

14.1.1 The costs actually incurred by the Contractor, subcontractors, and sub-subcontractors or their suppliers up to the effective date of such termination, and

14.1.2 The cost of settling and paying claims, provided the concurrence of the Contracting Officer is obtained prior to agreeing to any such settlement, arising out of the termination of Work under subcontracts or orders exclusive of the amounts paid or payable on account of supplies or materials delivered or services furnished by the subcontractor prior to the effective date of the notice of termination of Work under this Contract, which amounts shall be included in the cost on account of which payment is made under 14.1.1 above, and

14.1.3 An amount determined by adding to the amount of the costs under 14.1.1 above a sum equal to 20% (comprised of 10% overhead and 10% profit) thereof, provided, however, that if it appears that the Contractor would have sustained a documentable loss on the entire Contract had it been completed, an appropriate adjustment shall be made reducing the amount to be paid under this Article to reflect the indicated rate of loss.

14.2 In no event shall the Contractor's compensation exceed the total Contract amount.

14.3 The detailed estimate or amount of progress payments made to the Contractor prior to the day termination was effective shall not be conclusive evidence of costs incurred but progress payments shall be offset against any payment which the State makes to the Contractor as a result of such termination.

ARTICLE 15 - DISPUTES

15.1 The Contractor specifically agrees to submit, in the first instance, any dispute or disagreement relating to the performance of this Contract to the Group Director, who shall render a decision in writing and furnish a copy thereof to the Contractor. The Contractor agrees that this clause does not apply to any dispute or disagreement which involves delay, acceleration, interference or any other act or omission constituting a breach of contract; any matter relating to extensions of time, bonuses or liquidated damages; to the value of any order on contract or field order (issued pursuant to Division 01 - General Requirements); any termination for cause or convenience; or to termination costs allowable pursuant to contract.

15.2 The Contractor must request such decision in writing by certified mail no more than fifteen days after the Contractor knew or ought to have known of the facts which are the basis of the dispute or disagreement. Such writing shall identify the nature of the dispute or disagreement; identify the person who rendered the decision or interpretation involved and the date of the decision or interpretation with which the Contractor disputes or disagrees, attaching a copy of such decision or interpretation; contain a statement of the contractual basis for the dispute or disagreement; and identify the relief sought.

15.3 The Group Director may cause an investigation to be made of the circumstances involving the dispute or disagreement and may cause a fact-finding proceeding to be conducted before rendering the decision.

15.4 The Contractor agrees that the decision of the Group Director shall be final and conclusive. Nothing in this Contract shall be construed as making final the decision of any administrative official upon a question of law.

ARTICLE 16 - STATUTORY REQUIREMENTS FOR UTILIZATION OF MINORITY AND WOMEN OWNED BUSINESS ENTERPRISES

16.1 Pursuant to Section 313 of Article 15-A of the Executive Law of the State of New York, the Director of the Division of Minority and Women's Business Development has promulgated rules and regulations (Parts 140 through 145 of Subtitle N of Title 9 New York Code of Rules and Regulations) (the "Regulations") for the purposes of ensuring that certified Minority and Women owned Business Enterprises shall be given the opportunity for meaningful participation in the performance of State contracts and to facilitate the award of a fair share of State contracts and subcontracts to such business enterprises.

16.2 The Contractor shall make a good faith effort to solicit active participation in the Work by enterprises identified in the directory of certified businesses obtainable from the Division of Minority and Women's Business Development, New York State Department of Economic Development.

16.3 The Contractor agrees, as a material condition of this contract, to be bound by the provisions of Section 316 of Article 15-A of the Executive Law of the State of

New York which relates to the resolution of disputes which may arise under this Article.

16.4 The Contractor agrees to include the provisions of Paragraphs 16.2 and 16.3 of these General Conditions in every subcontract it enters into as to Work in connection with this Contract in such a manner that the provisions will be binding upon such subcontractor. However, the provisions of this paragraph shall not be binding upon the Contractor or its subcontractors in the performance of work or the provision of services that are unrelated, separate or distinct from this Contract as expressed by its terms.

16.5 The Regulations referred to in Paragraph 16.1 of these General Conditions require, among other things, that a bidder or proposer for a State contract submit a utilization plan which shall identify certified Minority or Women Owned Business Enterprises which the bidder/proposer intends to use in connection with the performance of the proposed State contract. Such a utilization plan shall be submitted after bids are opened but prior to contract award.

16.5.1 Pursuant to the Regulations: (1) the Commissioner may require the submission by the Contractor of compliance reports relating to the implementation of and adherence to the utilization plan in performing the Contract; (2) the Commissioner shall allow the Contractor to apply for a partial or total waiver of the Minority and Women Owned Business participation requirements; (3) the Contractor may file a complaint with the Executive Director of the Division of Minority and Women's Business Development regarding a denial of a request for waiver of Minority and Women Owned Business participation requirements; (4) the Commissioner may file a complaint with the Executive Director of the Division of Minority and Women's Business Development in the event the Contractor fails to comply with the Minority and Women Owned Business participation requirements set forth in this Contract; and (5) the Commissioner may disqualify the Contractor's bid or proposal as being non-responsive for failure to remedy notified deficiencies contained in the Contractor's utilization plan after an administrative hearing on the record, reviewing all grounds for disqualification stated by the Commissioner and taking into consideration all the criteria set forth in Section 313 of the Executive Law.

16.5.2 The Contractor is referred to the entirety of the provisions of Section 316 of Article 15-A of the Executive Law of the State of New York and of the Regulations for the Contractor's full familiarization with their applicable provisions as terms of this Contract.

ARTICLE 17 - COORDINATION OF SEPARATE CONTRACTS

17.1 The State may award other contracts which affect the Work of this Contract. In that event, the Contractor shall coordinate its Work with the work of other contractors in such manner as the State may direct. Each contractor shall control and coordinate the work of its subcontractors, if any. The State shall approve or require the modification of the work schedules of all contractors to the end that the Project may be progressed as expeditiously as the case permits.

17.2 If any part of the Work depends for proper execution or results upon the work of any other contractor, the Contractor shall inspect and promptly report in writing to the Director's Representative any defects in such work. The Contractor's failure to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of the Contractor's Work.

17.3 The Director's Representative shall issue appropriate directions and take such other measures to coordinate and progress the Work as may be reserved to the State in the Contract, and which an ordinarily reasonable project owner in similar circumstances would be expected to take.

17.4 The award of more than one contract for the Project requires sequential or otherwise interrelated contractor operations, and will involve inherent delays in the progress of any individual contractor's work. Accordingly, the State does not guarantee the unimpeded operations of any contractor. The Contractor acknowledges these conditions, and understands that the Contractor shall bear the risk of all delays caused by the presence or operations of other contractors engaged by the State and delays attendant upon any State-approved construction schedule.

17.5 The State shall not be liable for delays which occur by reason of any contractor's failure to comply with directions of the State or because of the neglect, failure or inability of any contractor to perform its work efficiently.

17.6 The Contractor shall defend, indemnify and hold the State harmless from any and all claims or judgments of damages and from costs and expenses to which the State may be subjected or which it may suffer or incur by reason of or based upon an allegation of the Contractor's failure to promptly comply with the directions of the Director's Representatives.

17.7 Should the Contractor sustain any damage through any act or omission of any other contractor having a contract with the State for the performance of work upon the Site of work which may be necessary to

be performed for the proper prosecution of the Work to be performed hereunder, or through any act or omission of a subcontractor of such contractor, the Contractor shall have no claim against the State for such damage, but shall have a right to recover such damage from the other contractor under the provision similar to the following provision which has been or will be inserted in the contract with such other contractors.

17.8 Should any other contractor having or who shall hereafter have a contract with the State for the performance of work upon the Site sustain any damage through any act or omission of the Contractor hereunder or through any act or omission of any subcontractor of the Contractor, the Contractor agrees to reimburse such other contractor for all such damages and to indemnify and hold the State harmless from all such claims.

ARTICLE 17A - DELAYS

17A.1 For the purposes of this Contract, the term delay includes delay, disruption, interference, inefficiencies, impedance, hindrance and acceleration.

17A.2 The Contractor agrees to make claim only for additional costs as defined in Document 012200, section 1.01, paragraph H from causes listed below, attributable to delay in the performance of this contract, occasioned by any act or omission to act by the State or any of its representatives. The Contractor also agrees that delay from any other cause shall be compensated for solely by an extension of time to complete the performance of the work.

17A.2.1 The failure of the State to take reasonable measures to coordinate and progress the work.

17A.2.2 Extended delays attributable to the State in the review or issuance of orders on contract or field orders, in shop drawing reviews and approvals or as a result of the cumulative impact of multiple orders on contract, which constitute a qualitative change to the project work and which have a verifiable impact on project costs.

17A.2.3 The unavailability of the site for such an extended period of time which the Director determines to significantly affect the scheduled completion of the contract.

17A.2.4 The issuance by the Director of a stop work order relative to a substantial portion of work for a period exceeding thirty days.

17A.3 The Contractor shall provide "notice of claim" of an anticipated claim for delay to the Contracting Officer by personal service or certified mail no more than fifteen days after the Contractor knew or ought to have known of the facts which form the basis of the claim. The Contracting Officer shall acknowledge receipt of the Contractor's notice, in writing, within five days. The Contractor agrees that the State shall have no liability for any damages which accrue more than fifteen days prior to the delivery or mailing of the required notice. The notice shall at a minimum provide a description of any operations that were, are being, or will be delayed, the date(s) and reasons for the delay, and, to the extent known, the information required by Paragraph 17A.6 of these General Conditions. In no case, shall oral notice to the Director's Representative or contracting officer constitute notice under this provision or be deemed to constitute a waiver of the written notice requirement. In no case, shall written notice to the Director's Representative or any other individual other that the Contracting Officer constitute notice under this provision or be deemed to constitute a waiver of the written notice requirement. The Contracting Officer is located at the following location:

Division of Contract Administration
Contracting Officer
35th Floor, Corning Tower
Albany, New York 12242

17A.4 Failure by the Contractor to adequately progress the completion of the work will be considered in determining the causes of delay. For any claim asserted under this Article, the Contractor shall keep detailed written records of the costs and shall make them available to the Contracting Officer at any time for the purposes of audit and review. Failure by the Contractor to provide the required written notice or to maintain and furnish records of the costs of such claims to the Contracting Officer shall constitute a waiver of the claim.

17A.5 The provisions of this Article apply only to claims for extra or additional costs attributable to delay and do not preclude determinations by the Director allowing reimbursement for additional costs for extra work pursuant to Article 10 of these General Conditions.

17A.6 REQUIRED CONTENT OF CLAIM SUBMISSION.

17A.6.1 As noted in Paragraph 17.A.3 of these General Conditions, all claims for delay shall be submitted in writing to the Contracting Officer and must be in sufficient detail to enable the Contracting Officer to ascertain the basis and the amount of each claim. The following information shall be provided by the Contractor upon request of the Contracting Officer if not previously supplied:

a. A description of the operations that were delayed, the reasons for the delay and an explanation of how they were delayed.

b. A detailed factual statement of the claim providing all necessary dates, locations and items of work affected by the claim.

c. An as-built chart, "Critical Path Method" scheme or other diagram or chart depicting in graphic form how the operations were or are claimed to be adversely affected including the report and conclusions of all engineering and scheduling experts or other consultants, if any.

d. The date on which actions resulting in the claim occurred or conditions resulting in the claim became evident.

e. A copy of the approved project schedule and a copy of the "notice of claim" required for the specific claim by Paragraph 17A.3 of these General Conditions.

f. To the extent known, the name, function, and activity of each State official, employee or agent, involved in, or knowledgeable about facts that gave rise to such claim.

g. The name, function, and activity of each Contractor or subcontractor officer, or employee, involved in, or knowledgeable about facts that gave rise to such claim.

h. The identification of any pertinent documents, and the substance of any material oral communication relating to such claim.

i. The amount of additional compensation sought and a breakdown of that amount into the categories specified in Division 01 - General Requirements.

j. If an extension of time is also requested, the specific number of days for which it is sought and the basis for such request as determined by an analysis of the construction progress schedule.

17A.7 REQUIRED CERTIFICATION OF CLAIMS.

17A.7.1 When submitting any notice of claim or claim data, the Contractor must certify in writing and under oath:

a. That supporting data is accurate and complete to the Contractor's best knowledge and belief;

b. That the amount of the claim and the claim itself accurately reflects what the Contractor in good faith believes to be the State's liability.

17A.7.2 If the Contractor is an individual, the certification shall be executed by that individual. If the Contractor is not an individual, the certification shall be executed by a company official in charge of the Contractor's operations pertaining to this contract or an officer or general partner of the Contractor having overall responsibility for the conduct of the Contractor's affairs.

17A.7.3 Failure to timely comply with any of the requirements of Article 17A for the submission of any claim for delay may constitute grounds for denial of such claim.

ARTICLE 18 - RESPONSIBILITY FOR DAMAGE

18.1 The Contractor shall faithfully perform and complete all of the Work required by the Contract, and has full responsibility for the following risks:

18.1.1 Loss or damage, direct or indirect, to any property owned by the State or to the Work including the building or structure in which the Work is being performed, or any other construction in progress whether being performed by any other contractor or the State, or to any plant, equipment, tools, materials or property furnished, used, installed or received by the Director under this Contract or any other contract. The Contractor shall bear all such risk of loss or damage, until all of the Work covered by the Contract has been finally accepted. In the event of such loss or damage the Contractor shall forthwith repair, replace, and make good any such loss or damage without additional cost.

18.1.2 Injury to persons (including death resulting there from), or damage to property caused by an occurrence arising out of the performance of this Contract for which the Contractor may be legally liable under the laws of torts.

18.2 The Contractor, however, shall not be responsible for damages resulting from faulty design or from willful acts of State officials or employees or from negligence resulting solely from acts or omissions of the State, its officers or employees. Nothing herein shall vest in third parties any right of action beyond such as may legally exist irrespective of this Article.

18.3 The Contractor shall indemnify and save harmless the State, its employees and agents from suits, actions, damages, and costs of every name and description relating to the performance of this Contract during its prosecution and until the acceptance thereof, and the State may retain such moneys from the amount due the Contractor as may be necessary to satisfy any claim for damages recovered against the State. The Contractor's obligations under this paragraph shall not be deemed waived by the failure of the State to retain the whole or any part of such moneys due the Contractor, nor shall such obligation be deemed limited or discharged by the enumeration or procurement of any insurance for liability for damages imposed by law upon the Contractor, subcontractor or the State.

ARTICLE 19 - INSURANCE - BUILDER'S RISK, LIABILITY AND WORKERS' COMPENSATION

19.1 Before commencing the Work and until the established Physical Completion date, all insurance required by the Contract shall be obtained at the sole cost and expense of the Contractor; and the Contractor shall furnish to the Contracting Officer a Certificate of

Insurance in a form satisfactory to the Contracting Officer showing that the Contractor has complied with this Article. Insurance shall be maintained with insurance carriers licensed to do business in New York State and acceptable to the Contracting Officer; shall be primary and non-contributing to any insurance or self insurance maintained by OGS; and shall be endorsed to provide written notice be given to the Contracting Officer at least thirty days prior to the cancellation, non-renewal, or material alteration of such policies, which notice, evidenced by return receipt of United States Certified Mail, any notice shall be addressed to:

Division of Contract Administration
Director
35th Floor, Corning Tower
Albany, New York 12242

19.1.1 The endorsement shall name The People of the State of New York, its officers, agents, employees and the assigned construction manager as additional insureds there under. This additional insured shall be primary and non-contributory. (General Liability Additional Insured Endorsement shall be on Insurance Service Office's (ISO) form number CG 20 10 11 85 and a copy of which shall be furnished along with the Certificate of Insurance.) The Contracting Officer may modify the provisions of this Article when deemed in the best interest of the State by order on contract or field order.

19.1.2 The Contractor, throughout the term of this Contract, or as otherwise required by this Contract, shall obtain and maintain in full force and effect on an occurrence form, the following insurance with limits not less than those described in this article, and as required by the terms of this Contract, or as required by law, whichever is greater. If such insurance contains an aggregate limit, it shall apply separately on a per job, per location basis.

19.1.3 The Contractor shall be solely responsible for the payment of all deductibles and Self Insured Retentions.

19.1.4 Not less than thirty days prior to the expiration date or renewal date of any insurance policies reflected on such certificates, the Contractor shall supply OGS updated replacement Certificates of Insurance, and amendatory endorsements.

19.2 The kinds and amount of insurance is as follows:

19.2.1 Workers' Compensation Insurance and Disability Benefits Law. A policy covering the obligations of the Contractor in accordance with the Workers' Compensation Law and the Disability Benefits Law covering all operations under the Contract, whether performed by the Contractor or by its subcontractor.

19.2.2 Commercial General Liability, and if necessary, Commercial Umbrella Liability Insurance with a limit of not less than $2,000,000 each occurrence. Such liability shall be written on the ISO occurrence form CG 00 01, or a substitute form providing equivalent coverages and shall cover liability resulting in Bodily Injury, Property Damage, Personal Injury or loss of use arising from premises operations, independent contractors, products-completed operations, broad form property damage, personal & advertising injury, cross liability coverage, liability assumed in a contract (including the tort liability of another assumed in a contract) and explosion, collapse & underground coverage.

If such insurance contains an aggregate limit, it shall apply separately on a per job, per location basis.

19.2.3 Comprehensive Business Automobile Liability, and if necessary, Commercial Umbrella Liability Insurance with a limit of not less than $2,000,000 each accident. Such insurance shall cover liability arising out of any automobile including owned, leased, hired and non-owned automobiles.

19.2.4 Builder's Risk: The Contractor shall be liable for any and all damages and losses to the Project prior to the State of New York's acceptance of the Project as fully completed except that the Contractor shall not be liable for:

19.2.4.1 Losses covered by the Builder's Risk property insurance provided by the State of New York; except that the Contractor shall be liable for the applicable deductible.

19.2.4.2 All policies shall be issued by insurance companies licensed to conduct such business under the laws of the State of New York, shall be written for the benefit of the State of New York and for the Contractor as their interests may appear, and shall run until the contract physical completion date. The State of New York must be listed as loss payee pursuant to this policy. Policies expiring on a fixed date before physical completion must be renewed and re-filed not less than thirty days before such expiration date.

19.2.5 If the work involves abatement, removal, repair, replacement, enclosure, encapsulation and/or disposal of any petroleum, petroleum product, hazardous material or substance including asbestos, lead or mold, and those as defined by applicable State and federal laws and regulations, the Contractor shall procure, or otherwise obtain through an approved subcontractor, and maintain in full force and effect throughout the term of the contract, and for two years after completion hereof, pollution legal liability insurance with limits of not less than $5,000,000, providing coverage for bodily injury and property

damage, including loss of use of damaged property or of property that has not been physically injured. Such policy shall provide coverage for actual, alleged or threatened emission, discharge, dispersal, seepage, release or escape of pollutants, including any loss, cost or expense incurred as a result of any cleanup of pollutants or in the investigation, settlement or defense of any claim, suit, or proceedings against OGS arising from Contractor's work. The State of New York shall be named as additional insured and this shall be primary.

19.2.5.1 If automobiles are to be used for transporting hazardous materials, the Contractor shall provide pollution liability broadened coverage for covered autos (endorsement CA 99 48) as well as proof of MCS 90.

19.3 The Contractor may provide the required proof of insurance on industry forms provided that no other endorsements exclude, delete or restrict those coverage's provided for by this article. It is required that companies affording coverage list the company name in full as filed with the New York State Insurance Department. The contract number and project location must be provided in order to approve the certificate.

19.4 Should the Contractor fail to provide or maintain any insurance required by law the Contract will be considered null and void. Further, no contractor is permitted to access the project site without providing proof of proper insurance to the Contracting Officer or his designated representative. No payments will be authorized by the Contracting Officer to any firm who fails to comply with the provisions of this Article.

ARTICLE 20 - OCCUPANCY PRIOR TO COMPLETION AND ACCEPTANCE

20.1 The State shall have the right to take possession of or use any completed or partially completed portion of the Work. Written notice of such possession shall be given to the Contractor by the Director. The notice shall identify the date when such possession shall commence and the area, equipment or system involved. Written notice shall also be given the Contractor for any cessation of such possession by the State. Such possession or use shall not be deemed an acceptance of any Work. While the State is in such possession, the Contractor, notwithstanding the provisions of Article 18 of the Contract, shall be relieved of the responsibility for loss or damage to the Work except for that resulting from the Contractor's fault or negligence. If such possession or use by the State delays the progress of the Work or causes additional expense to the Contractor, an adjustment in the Contract price and/or the time of completion shall be made and the Contract modified in writing accordingly. The provisions relating to an adjustment in the Contract price or the time of completion contained in this paragraph shall not apply to occupancy or possession after Substantial Completion.

ARTICLE 21 - PAYMENT

21.1 The Contractor shall submit monthly, or at more frequent intervals if permitted in writing by the Contracting Officer, a requisition for a progress payment to the designated payment office for Work performed and materials furnished up to the date of the requisition, less any amount previously paid to the Contractor. Except as otherwise provided by this Contract, the Contracting Officer shall approve and cause to be paid the requisition for the progress payment less an amount necessary to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged and less any amount authorized by law to be retained. The requisition shall be in such form and supported by such evidence as the Contracting Officer may reasonably require. The designated payment office is listed as follows:

Division of Contract Administration
Bureau of Contract Performance
35th Floor, Corning Tower
Albany, New York 12242

21.1.1 For those contracts designated as Labor and Material reimbursement or similar type contracts, the contractor shall submit to the Contract Payment Audit Group no later than 60 days from the period of when the work occurred, acceptable proof of labor and material costs specific to the approved scope of work as verified by the Directors Representative, to the Contracting Officer for audit, verification and approval prior to the submission of any payment. The Contract Payment Audit Group is located at the following location:

Division of Contract Administration
Contract Payment Audit Group
35th Floor, Corning Tower
Albany, New York 12242

21.1.2 The submittal of cost for reimbursement to the Contractor shall be in such form and supported by such evidence as the Contracting Officer may reasonably require.

21.1.3 For those contracts designated as Electronic Contractor Requisition (ECR) eligible, if the contractor agrees to participate (participation is not mandatory – a contractor may still elect to submit paper requisitions) , the contractor shall provide an Electronic Contractor Requisition (ECR) Program Certification form which shall become part of this agreement. The contractor further certifies that the individual certifying the requisition is duly authorized to undertake requisitioning transactions. The contractor understands that the State will rely on the information disclosed in the contractor's requisition consistent with all of the

provisions of this Article. A contractor need not submit electronic requisitions in order to receive electronic payments.

21.2 The Director or the Contracting Officer may refuse to approve the requisition or a portion of it if the Contractor is failing or refusing to prosecute the Work in accordance with the Contract.

21.3 Payment will be made for approved materials not yet incorporated in the Work which are in short and/or critical supply and for materials determined to be specifically fabricated for the project. Requisitions which require payment for materials shall be accompanied by a notarized statement certifying that the materials for which payment is requisitioned are the Contractor's property and have been suitably stored and insured. The Contractor shall provide such evidence of the value of the material stored as the Contracting Officer may reasonably require. The Contractor shall have full continuing responsibility to insure and protect such materials and maintain them in proper condition to fulfill Contract requirements when installed.

21.4 When the Work or major milestones thereof as contemplated by the terms of this Contract are substantially completed, the Contractor shall submit to the Contracting Officer a requisition for payment of the remaining amount of the Contract balance. Upon receipt of such requisition the Contracting Officer shall, except as otherwise provided by this Contract, approve and cause to be paid the remaining amount of the Contract balance less two times the value of any remaining items to be completed and an amount necessary to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged. As the remaining items of Work are satisfactorily completed or corrected, the Contracting Officer shall cause to be paid, upon receipt of a requisition, for these remaining items less an amount necessary to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged.

21.5 No more than 60 days after the issuance of the Physical Completion Report, the Contractor shall submit to the Contracting Officer or his designated representative a requisition for payment of the remaining Contract balance. Upon receipt of this requisition, the Contracting Officer shall, except as otherwise provided by this Contract, approve and cause such requisition to be paid less any amount necessary to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged. The Contractor waives any claim or right to payment of any contract balance which has not been requisitioned for payment within 60 days of the issuance of the Physical Completion Report.

21.6 The final certificate letter will not be issued until all the labor and material required by the Contract has been furnished and completed, all disputes and claims relating to the performance of the Contract considered and disposed of and all accounts for extra work and materials and allowances for omissions have been rendered and considered. The Contractor waives any claim or right to additional compensation which has not been submitted in writing via certified or registered mail to the Contracting Officer pursuant to Article 17A, within thirty days of the issuance of the Physical Completion Report.

21.7 The final certificate letter will constitute the acceptance of the Work by the State, except as to Work thereafter found to be defective. The date of such certificate shall be regarded as the date of acceptance of the Work.

21.8 No payment will be made to a foreign Contractor until it furnishes satisfactory proof that it has paid all taxes required of foreign Contractors under the provisions of the New York State Tax Law. A foreign Contractor as used in this paragraph shall mean a Contractor denominated "foreign" by the New York State Tax Law.

21.9 The contractor is advised that consistent with Subdivision 3-a, of Section 220 of the Labor Law, the filing of certified payroll records is a condition precedent to payment of any sums due and owing to any person performing work on this project. The failure to file pursuant to this section will result in a payment delay until such time as the filing occurs.

21.10 The Contractor acknowledges that it will not receive payment on any requests for payment unless the contractor complies with the State Comptroller's electronic payment deposit procedures Payments requested by the contractor will only be facilitated via electronic deposit, except where the Commissioner has expressly authorized payment by paper check.

ARTICLE 22 - AUDITS AND RECORDS

22.1 The Group Director, the Comptroller or their representatives shall have the right to examine all books, records, documents, and other data of the Contractor, subcontractors, material-men or suppliers relating to the bidding, pricing or performance of this Contract or any change or modification thereto for the purpose of evaluating the accuracy, completeness, and currency of the cost or pricing data submitted. This right of examination shall extend to all documents necessary to permit adequate evaluation of the cost or pricing data submitted along with the computations and projections used therein.

22.2 The above materials shall be made available at the office of the Contractor, subcontractors, material-men or suppliers at all reasonable times for inspection,

audit or reproduction until the expiration of six years from the date of the final certificate for the Contract.

22.3 If this Contract is completely or partially terminated, the records relating to the Work terminated shall be made available for a period of six years from the date of any resulting final settlement.

22.4 Records which relate to the Disputes Clause of this Contract or litigation or the settlement of claims arising out of the performance of this Contract shall be made available until such appeals, litigation or claims have been disposed of.

22.5 The Contractor shall insert a clause containing all of the provisions of Paragraphs 22.1 to 22.4 of these General Conditions in all subcontracts or purchase orders issued hereunder.

22.6 The Contractor shall make available to the Contracting Officer, upon written request, all records required to be kept by this Contract or by Article 3-A of the Lien Law. The failure to provide said records upon the receipt of the written request shall bar any recovery for claimed extra or additional costs under this Contract.

ARTICLE 23 – LABOR LAW PROVISIONS

23.1 The contractor shall post, in a location designated by the State, a copy of the New York State Department of Labor schedules of prevailing wages and supplements for this Project, a copy of all re-determinations of such schedules for the Project, the Workers' Compensation Law Section 51 notice, all other notices required by law to be posted at the Site, the Department of Labor notice that this Project is a public work project on which each worker is entitled to receive the prevailing wages and supplements for the occupation at which he or she is working, and all other notices which the State directs the contractor to post. The contractor shall provide a surface for such notices which is satisfactory to the State. The contractor shall maintain such notices in a legible manner and shall replace any notice or schedule which is damaged, defaced, illegible or removed for any reason. The contractor shall post such notices before commencing any Work on the Site and shall maintain such notices until all Work on the Site is complete.

23.2 The contractor shall distribute to each worker for this Contract a notice, in a form provided by the State, that this Project is a public work project on which each worker is entitled to receive the prevailing wage and supplements for the occupation at which he or she is working. Worker includes employees of contractor and all Subcontractors and all employees of Suppliers entering the Site. Such notice shall be distributed to each worker before he or she starts performing any Work of this Contract. At the time of distribution, the contractor shall have each worker sign a statement, in a form provided by the State, certifying that the worker has received the notice required by this section, which signed statement shall be maintained with the payroll records required by Paragraph 23.3 of these General Conditions.

23.3 The contractor shall maintain on the Site the original certified payroll or certified transcripts thereof which the contractor and all of its Subcontractors are required to maintain pursuant to New York Labor Law Section 220. The contractor shall maintain with the payrolls or transcripts thereof, the statements signed by each worker pursuant to Paragraph 23.2 of these General Conditions.

23.4 A contractor or subcontractor who is required under New York Labor Law Section 220 to maintain transcripts of payroll records must submit to the contracting agency a transcript of the original payroll record within thirty days of issuance of its first payroll and every thirty days, thereafter. The copy of the payroll record must be subscribed and affirmed as true under penalty of perjury. The copy must include the contract number and should be directed to the Director's Representative at the job site. The Directors Representative is hereby designated as the individual responsible for the receipt, collection and review for authenticity of payroll records filed for this contract, consistent with Article 23.4, General Conditions and subparagraph (iii) and (iv) Section 220 Labor Law.

23.5 In accordance with New York Labor Law §222-H, the contractor agrees where the total cost of all work to be performed under the contract is at least two hundred fifty thousand dollars; all laborers, workers, and mechanics employed in the performance of this contract on the public work site, either by the contractor, sub-contractor or other person doing or contracting to do the whole or a part of the work contemplated by this contract, shall be certified prior to performing any work on the project as having successfully completed a course in construction safety and health approved by the United States department of labor's occupational safety and health administration that is at least ten hours in duration.

23.6 In accordance with New York Labor Law § 220 (3) (a), the Contractor and every sub-contractor agrees to notify all laborers, workers or mechanics in their employ in writing of the prevailing rate of wage for their particular job classification. Such notification shall be given to every laborer, worker or mechanic on their first pay stub and with every pay stub thereafter. At the beginning of performance of every public works contract, and with the first paycheck after July first of each year, the Contractor and every sub-contractor shall notify all laborers, workers, and mechanics in their employ in writing, in accordance with such form as is prescribed by the department, of the telephone number and address for the department. The notice shall also

inform each laborer, worker, or mechanic of his or her right to contact the department or some other representative if, at any time while working for the public works contractor or sub-contractor, he or she does not receive the proper prevailing rate of wages or supplements for his or her particular job classification that he or she is entitled to receive under the contract.

ARTICLE 24 - STATUTORY REQUIREMENTS FOR RESTRICTIONS ON CONTACTS DURING THE PROCUREMENT PROCESS AND DISCLOSURE OF CONTACTS AND RESPONSIBILITY OF OFFERERS MISCELLANEOUS PROVISIONS

24.1 New York State Finance Law §139-k requires that every procurement contract award subject to the provisions of State Finance Law §139-k or §139-j shall contain a certification by the offerer that all information provided to the procuring governmental agency with respect to State Finance Law §139-k is complete, true and accurate. The Contractor shall provide that certification in his contract or agreement.

24.2 New York State Finance Law

24.2.1 New York State Finance Law § 139-k(2) obligates a Governmental Entity to obtain specific information regarding prior non-responsibility determinations. This information must be collected in addition to the information that is separately obtained pursuant to State Finance Law § 163 (9). In accordance with State Finance Law § 139-k, an offerer must be asked to disclose whether there has been a finding of non-responsibility made within the previous four (4) years by any Governmental Entity due to: (a) a violation of State Finance Law § 139-j or (b) the intentional provision of false or incomplete information to a Governmental Entity.

24.2.2 As part of its responsibility determination, State Finance Law § 139-k(3) mandates consideration of whether an offerer fails to timely disclose or complete information regarding the above non-responsibility determination. In accordance with law, no procurement contract shall be awarded to any offerer that fails to timely disclose accurate or complete information under this section, unless a finding is made that the award of the Procurement Contract to the Offerer is necessary to protect public property or public health safety, and that the Offerer is the only source capable of supplying the required Article of Procurement within the necessary timeframe. The required forms to be completed by the offerer must be submitted to the Governmental Entity conducting the government procurement. The Governmental Entity will have included the disclosure request in its solicitation of proposals or bid documents or specifications of contract documents, as applicable, for procurement contracts.

ARTICLE 25 – MISCELLANEOUS PROVISIONS

25.1 Appendix A, standard clauses for all N.Y. State contracts, is attached hereto and is made a part of this agreement as if set forth herein.

25.2 If, in carrying out this Work, a harmful dust hazard is created for which appliances or methods for the elimination of harmful dust have been approved by the Board of Standards and Appeals, then the Contractor shall install, maintain and effectively operate such appliances and methods during the life of this Contract; and in case of Contractor's failure to comply, as provided by Section 222-a of the Labor Law, the Contract shall be void.

25.3 RETAINED PERCENTAGES: The Contractor agrees that, if the Contract Documents for this Contract includes Performance and Payment Bonds, the State shall retain five percent of the amount of each progress payment in accordance with Section 139-f of the State Finance Law. The Contractor further agrees that, if the Contract Documents for this Contract do not include Performance and Payment Bonds, the State shall retain ten percent of the amount of each progress payment in accordance with Section 139-f of the State Finance Law.

25.4 DOMESTIC STEEL: The Contractor agrees, that if the value of this contract exceeds $100,000 all structural steel, reinforcing steel and other major steel items to be incorporated in the Work of this Contract shall be produced and made in whole or substantial part in the United States, its territories or possessions.

25.5 COMMENCEMENT OF ACTIONS: The time, as prescribed by law, within which an action on the contract against the Contractor must be commenced shall be computed from the completion of physical work. The Contractor may notify the State in writing that the physical work of the contract has been completed by specifying a completion date, which date shall be no more than thirty days previous to the date of such notice. The completion date set forth in such notice shall be deemed the date of completion of the physical work unless the State, within thirty days of receipt of such notice, notifies the Contractor in writing of its disagreement. Any notice pursuant to this paragraph shall be sent by the Contractor by Certified Mail and addressed to:

Division of Contract Administration
Contracting Officer
35th Floor, Corning Tower
Albany, New York 12242

25.5.1 In the event that the Contractor fails to send the notice provided for herein or the State disagrees in the manner provided for herein, the date of completion of the physical work shall be determined in any other manner provided by law.

25.6 WORKER'S COMPENSATION LAW: In accordance with Worker's Compensation Law (WCL) §141-b (Suspension and Debarment), any person subject to a final assessment of civil fines or penalties or a stop-work order, or that has been convicted of a misdemeanor for a violation of WCL §§ 26 (Enforcement of Payment in Default), 52 (Effect of Failure to Secure Compensation) or 131 (Payroll Records), and any substantially-owned affiliated entity of such person, shall be ineligible to submit a bid on or be awarded any such public work contract or subcontract with the State, any municipal corporation or public body for a period of one (1) year from the final determination or conviction. Any person convicted of a felony under Article 8 (Administration) of the WCL, or a misdemeanor under WCL §§125 (Job Description Prohibited Based on Prior Receipt of Benefits) and 125-a (Civil Enforcement) shall be ineligible to submit a bid or be awarded any public work contract or subcontract with the State, any municipal corporation or public body for a period of five (5) years from such conviction.

25.7 ENVIRONMENTAL CONSERVATION LAWS: The Contractor certifies and warrants that all heavy duty vehicles, as defined in New York State Environmental Law (ECL) section 19-0323, to be used under this Contract, will comply with the specifications and provisions of ECL section 19-0323 and any regulations promulgated pursuant thereto, which requires the use of BART and ULSD, unless specifically waived by NYSDEC. Qualification for a waiver under this law will be the responsibility of the Contractor.

25.8 REPORTING OF ILLEGAL ACTIVITY: During the term of the contract, the Contractor agrees to report any observed or suspected illegal activity of its employees, agents or other third parties, to the Contracting Officer at 518-474-0201, the Group Director, OGS Legal Services, the State Inspector General or other law enforcement agency. Failure to report criminal conduct associated with a contract awarded by the Office of General Services, will be considered a material breach of the contract and may provide grounds for disqualification of the subject Contractor or Subcontractor for award of future contracts. The Contractor will include the provisions of this section in every subcontract, in such a manner that the provisions will be binding upon each Subcontractor as to work performed in connection with the State contract.

APPENDIX A

STANDARD CLAUSES FOR NEW YORK STATE CONTRACTS

**PLEASE RETAIN THIS DOCUMENT
FOR FUTURE REFERENCE.**

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STANDARD CLAUSES FOR NYS CONTRACTS

The parties to the attached contract, license, lease, amendment or other agreement of any kind (hereinafter, "the contract" or "this contract") agree to be bound by the following clauses which are hereby made a part of the contract (the word "Contractor" herein refers to any party other than the State, whether a contractor, licenser, licensee, lessor, lessee or any other party):

1. EXECUTORY CLAUSE. In accordance with Section 41 of the State Finance Law, the State shall have no liability under this contract to the Contractor or to anyone else beyond funds appropriated and available for this contract.

2. NON-ASSIGNMENT CLAUSE. In accordance with Section 138 of the State Finance Law, this contract may not be assigned by the Contractor or its right, title or interest therein assigned, transferred, conveyed, sublet or otherwise disposed of without the State's previous written consent, and attempts to do so are null and void. Notwithstanding the foregoing, such prior written consent of an assignment of a contract let pursuant to Article XI of the State Finance Law may be waived at the discretion of the contracting agency and with the concurrence of the State Comptroller where the original contract was subject to the State Comptroller's approval, where the assignment is due to a reorganization, merger or consolidation of the Contractor's business entity or enterprise. The State retains its right to approve an assignment and to require that any Contractor demonstrate its responsibility to do business with the State. The Contractor may, however, assign its right to receive payments without the State's prior written consent unless this contract concerns Certificates of Participation pursuant to Article 5-A of the State Finance Law.

3. COMPTROLLER'S APPROVAL. In accordance with Section 112 of the State Finance Law, if this contract exceeds $50,000 (or $75,000 for State University of New York or City University of New York contracts for goods, services, construction and printing, and $150,000 for State University Health Care Facilities) or if this is an amendment for any amount to a contract which, as so amended, exceeds said statutory amount, or if, by this contract, the State agrees to give something other than money when the value or reasonably estimated value of such consideration exceeds $25,000, it shall not be valid, effective or binding upon the State until it has been approved by the State Comptroller and filed in his office. Comptroller's approval of contracts let by the Office of General Services, either for itself or its customer agencies by the Office of General Services Business Services Center, is required when such contracts exceed $85,000. Comptroller's approval of contracts established as centralized contracts through the Office of General Services is required when such contracts exceed $125,000, and when a purchase order or other procurement transaction issued under such centralized contract exceeds $200,000.

4. WORKERS' COMPENSATION BENEFITS. In accordance with Section 142 of the State Finance Law, this contract shall be void and of no force and effect unless the Contractor shall provide and maintain coverage during the life of this contract for the benefit of such employees as are required to be covered by the provisions of the Workers' Compensation Law.

5. NON-DISCRIMINATION REQUIREMENTS. To the extent required by Article 15 of the Executive Law (also known as the Human Rights Law) and all other State and Federal statutory and constitutional non-discrimination provisions, the Contractor will not discriminate against any employee or applicant for employment, nor subject any individual to harassment, because of age, race, creed, color, national origin, citizenship or immigration status, sexual orientation, gender identity or expression, military status, sex, disability, predisposing genetic characteristics, familial status, marital status, or domestic violence victim status or because the individual has opposed any practices forbidden under the Human Rights Law or has filed a complaint, testified, or assisted in any proceeding under the Human Rights Law. Furthermore, in accordance with Section 220-e of the Labor Law, if this is a contract for the construction, alteration or repair of any public building or public work or for the manufacture, sale or distribution of materials, equipment or supplies, and to the extent that this contract shall be performed within the State of New York, Contractor agrees that neither it nor its subcontractors shall, by reason of race, creed, color, disability, sex, or national origin: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. If this is a building service contract as defined in Section 230 of the Labor Law, then, in accordance with Section 239 thereof, Contractor agrees that neither it nor its subcontractors shall by reason of race, creed, color, national origin, age, sex or disability: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. Contractor is subject to fines of $50.00 per person per day for any violation of Section 220-e or Section 239 as well as possible termination of this contract and forfeiture of all moneys due hereunder for a second or subsequent violation.

6. WAGE AND HOURS PROVISIONS. If this is a public work contract covered by Article 8 of the Labor Law or a building service contract covered by Article 9 thereof, neither Contractor's employees nor the

employees of its subcontractors may be required or permitted to work more than the number of hours or days stated in said statutes, except as otherwise provided in the Labor Law and as set forth in prevailing wage and supplement schedules issued by the State Labor Department. Furthermore, Contractor and its subcontractors must pay at least the prevailing wage rate and pay or provide the prevailing supplements, including the premium rates for overtime pay, as determined by the State Labor Department in accordance with the Labor Law. Additionally, effective April 28, 2008, if this is a public work contract covered by Article 8 of the Labor Law, the Contractor understands and agrees that the filing of payrolls in a manner consistent with Subdivision 3-a of Section 220 of the Labor Law shall be a condition precedent to payment by the State of any State approved sums due and owing for work done upon the project.

7. NON-COLLUSIVE BIDDING CERTIFICATION. In accordance with Section 139-d of the State Finance Law, if this contract was awarded based upon the submission of bids, Contractor affirms, under penalty of perjury, that its bid was arrived at independently and without collusion aimed at restricting competition. Contractor further affirms that, at the time Contractor submitted its bid, an authorized and responsible person executed and delivered to the State a non-collusive bidding certification on Contractor's behalf.

8. INTERNATIONAL BOYCOTT PROHIBITION. In accordance with Section 220-f of the Labor Law and Section 139-h of the State Finance Law, if this contract exceeds $5,000, the Contractor agrees, as a material condition of the contract, that neither the Contractor nor any substantially owned or affiliated person, firm, partnership or corporation has participated, is participating, or shall participate in an international boycott in violation of the federal Export Administration Act of 1979 (50 USC App. Sections 2401 et seq.) or regulations thereunder. If such Contractor, or any of the aforesaid affiliates of Contractor, is convicted or is otherwise found to have violated said laws or regulations upon the final determination of the United States Commerce Department or any other appropriate agency of the United States subsequent to the contract's execution, such contract, amendment or modification thereto shall be rendered forfeit and void. The Contractor shall so notify the State Comptroller within five (5) business days of such conviction, determination or disposition of appeal (2 NYCRR § 105.4).

9. SET-OFF RIGHTS. The State shall have all of its common law, equitable and statutory rights of set-off. These rights shall include, but not be limited to, the State's option to withhold for the purposes of set-off any moneys due to the Contractor under this contract up to any amounts due and owing to the State with regard to this contract, any other contract with any State department or agency, including any contract for a term commencing prior to the term of this contract, plus any amounts due and owing to the State for any other reason including, without limitation, tax delinquencies, fee delinquencies or monetary penalties relative thereto. The State shall exercise its set-off rights in accordance with normal State practices including, in cases of set-off pursuant to an audit, the finalization of such audit by the State agency, its representatives, or the State Comptroller.

10. RECORDS. The Contractor shall establish and maintain complete and accurate books, records, documents, accounts and other evidence directly pertinent to performance under this contract (hereinafter, collectively, the "Records"). The Records must be kept for the balance of the calendar year in which they were made and for six (6) additional years thereafter. The State Comptroller, the Attorney General and any other person or entity authorized to conduct an examination, as well as the agency or agencies involved in this contract, shall have access to the Records during normal business hours at an office of the Contractor within the State of New York or, if no such office is available, at a mutually agreeable and reasonable venue within the State, for the term specified above for the purposes of inspection, auditing and copying. The State shall take reasonable steps to protect from public disclosure any of the Records which are exempt from disclosure under Section 87 of the Public Officers Law (the "Statute") provided that: (i) the Contractor shall timely inform an appropriate State official, in writing, that said records should not be disclosed; and (ii) said records shall be sufficiently identified; and (iii) designation of said records as exempt under the Statute is reasonable. Nothing contained herein shall diminish, or in any way adversely affect, the State's right to discovery in any pending or future litigation.

11. IDENTIFYING INFORMATION AND PRIVACY NOTIFICATION. (a) Identification Number(s). Every invoice or New York State Claim for Payment submitted to a New York State agency by a payee, for payment for the sale of goods or services or for transactions (e.g., leases, easements, licenses, etc.) related to real or personal property must include the payee's identification number. The number is any or all of the following: (i) the payee's Federal employer identification number, (ii) the payee's Federal social security number, and/or (iii) the payee's Vendor Identification Number assigned by the Statewide Financial System. Failure to include such number or numbers may delay payment. Where the payee does not have such number or numbers, the payee, on its invoice or Claim for Payment, must give the reason or reasons why the payee does not have such number or numbers.

(b) Privacy Notification. (1) The authority to request the above personal information from a seller of goods or services or a lessor of real or personal property, and the authority to maintain such information, is found in Section 5 of the State Tax Law. Disclosure of this information by the seller or lessor to the State is mandatory. The principal purpose for which the information is collected is to enable the State to identify individuals, businesses and others who have been delinquent in filing tax returns or may have understated their tax liabilities and to generally identify persons affected by the taxes administered by the Commissioner of Taxation and Finance. The information will be used for tax administration purposes and for any other purpose authorized by law. (2) The personal information is requested by the purchasing unit of the agency contracting to purchase the goods or services or lease the real or personal property covered by this contract or lease. The information is maintained in the Statewide Financial System by the Vendor Management Unit within the Bureau of State Expenditures, Office of the State Comptroller, 110 State Street, Albany, New York 12236.

12. EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITIES AND WOMEN. In accordance with Section 312 of the Executive Law and 5 NYCRR Part 143, if this contract is: (i) a written agreement or purchase order instrument, providing for a total expenditure in excess of $25,000.00, whereby a contracting agency is committed to expend or does expend funds in return for labor, services, supplies, equipment, materials or any combination of the foregoing, to be performed for, or rendered or furnished to the contracting agency; or (ii) a written agreement in excess of $100,000.00 whereby a contracting agency is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon; or (iii) a written agreement in excess of $100,000.00 whereby the owner of a State assisted housing project is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon for such project, then the following shall apply and by signing this agreement the Contractor certifies and affirms that it is Contractor's equal employment opportunity policy that:

(a) The Contractor will not discriminate against employees or applicants for employment because of race, creed, color, national origin, sex, age, disability or marital status, shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on State contracts and will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination. Affirmative action shall mean recruitment, employment, job assignment, promotion, upgradings, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation;

(b) at the request of the contracting agency, the Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of the Contractor's obligations herein; and

(c) the Contractor shall state, in all solicitations or advertisements for employees, that, in the performance of the State contract, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.

Contractor will include the provisions of "(a), (b) and (c)" above, in every subcontract over $25,000.00 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon (the "Work") except where the Work is for the beneficial use of the Contractor. Section 312 does not apply to: (i) work, goods or services unrelated to this contract; or (ii) employment outside New York State. The State shall consider compliance by a contractor or subcontractor with the requirements of any federal law concerning equal employment opportunity which effectuates the purpose of this clause. The contracting agency shall determine whether the imposition of the requirements of the provisions hereof duplicate or conflict with any such federal law and if such duplication or conflict exists, the contracting agency shall waive the applicability of Section 312 to the extent of such duplication or conflict. Contractor will comply with all duly promulgated and lawful rules and regulations of the Department of Economic Development's Division of Minority and Women's Business Development pertaining hereto.

13. CONFLICTING TERMS. In the event of a conflict between the terms of the contract (including any and all attachments thereto and amendments thereof) and the terms of this Appendix A, the terms of this Appendix A shall control.

14. GOVERNING LAW. This contract shall be governed by the laws of the State of New York except where the Federal supremacy clause requires otherwise.

15. LATE PAYMENT. Timeliness of payment and any interest to be paid to Contractor for late payment shall be governed by Article 11-A of the State Finance Law to the extent required by law.

16. NO ARBITRATION. Disputes involving this contract, including the breach or alleged breach thereof, may not be submitted to binding arbitration (except where statutorily authorized), but must, instead, be heard in a court of competent jurisdiction of the State of New York.

17. SERVICE OF PROCESS. In addition to the methods of service allowed by the State Civil Practice Law & Rules ("CPLR"), Contractor hereby consents to service of process upon it by registered or certified mail, return receipt requested. Service hereunder shall be complete upon Contractor's actual receipt of process or upon the State's receipt of the return thereof by the United States Postal Service as refused or undeliverable. Contractor must promptly notify the State, in writing, of each and every change of address to which service of process can be made. Service by the State to the last known address shall be sufficient. Contractor will have thirty (30) calendar days after service hereunder is complete in which to respond.

18. PROHIBITION ON PURCHASE OF TROPICAL HARDWOODS. The Contractor certifies and warrants that all wood products to be used under this contract award will be in accordance with, but not limited to, the specifications and provisions of Section 165 of the State Finance Law, (Use of Tropical Hardwoods) which prohibits purchase and use of tropical hardwoods, unless specifically exempted, by the State or any governmental agency or political subdivision or public benefit corporation. Qualification for an exemption under this law will be the responsibility of the contractor to establish to meet with the approval of the State.

In addition, when any portion of this contract involving the use of woods, whether supply or installation, is to be performed by any subcontractor, the prime Contractor will indicate and certify in the submitted bid proposal that the subcontractor has been informed and is in compliance with specifications and provisions regarding use of tropical hardwoods as detailed in § 165 State Finance Law. Any such use must meet with the approval of the State; otherwise, the bid may not be considered responsive. Under bidder certifications, proof of qualification for exemption will be the responsibility of the Contractor to meet with the approval of the State.

19. MACBRIDE FAIR EMPLOYMENT PRINCIPLES. In accordance with the MacBride Fair Employment Principles (Chapter 807 of the Laws of 1992), the Contractor hereby stipulates that the Contractor either (a) has no business operations in Northern Ireland, or (b) shall take lawful steps in good faith to conduct any business operations in Northern Ireland in accordance with the MacBride Fair Employment Principles (as described in Section 165 of the New York State Finance Law), and shall permit independent monitoring of compliance with such principles.

20. OMNIBUS PROCUREMENT ACT OF 1992. It is the policy of New York State to maximize opportunities for the participation of New York State business enterprises, including minority- and women-owned business enterprises as bidders, subcontractors and suppliers on its procurement contracts.

Information on the availability of New York State subcontractors and suppliers is available from:

NYS Department of Economic Development
Division for Small Business and Technology Development
625 Broadway
Albany, New York 12245
Telephone: 518-292-5100

A directory of certified minority- and women-owned business enterprises is available from:

NYS Department of Economic Development
Division of Minority and Women's Business Development
633 Third Avenue 33rd Floor
New York, NY 10017
646-846-7364
email: mwbebusinessdev@esd.ny.gov
https://ny.newnycontracts.com/FrontEnd/searchcertifieddirectory.asp

The Omnibus Procurement Act of 1992 (Chapter 844 of the Laws of 1992, codified in State Finance Law § 139-i and Public Authorities Law § 2879(3)(n)–(p)) requires that by signing this bid proposal or contract, as applicable, Contractors certify that whenever the total bid amount is greater than $1 million:

(a) The Contractor has made reasonable efforts to encourage the participation of New York State Business Enterprises as suppliers and subcontractors, including certified minority- and women-owned business enterprises, on this project, and has retained the documentation of these efforts to be provided upon request to the State;

(b) The Contractor has complied with the Federal Equal Opportunity Act of 1972 (P.L. 92-261), as amended;

(c) The Contractor agrees to make reasonable efforts to provide notification to New York State residents of employment opportunities on this project through listing any such positions with the Job Service Division of the New York State Department of Labor, or providing such notification in such manner as is consistent with existing collective bargaining contracts or agreements. The Contractor agrees to document these efforts and to provide said documentation to the State upon request; and

(d) The Contractor acknowledges notice that the State may seek to obtain offset credits from foreign countries as a result of this contract and agrees to cooperate with the State in these efforts.

21. RECIPROCITY AND SANCTIONS PROVISIONS. Bidders are hereby notified that if their principal place of business is located in a country, nation, province, state or political subdivision that penalizes New York State vendors, and if the goods or services they offer will be substantially produced or performed outside New York State, the Omnibus Procurement Act 1994 and 2000 amendments (Chapter 684 and Chapter 383, respectively, codified in State Finance Law § 165(6) and Public Authorities Law § 2879(5)) require that they be denied contracts which they would otherwise obtain. NOTE: As of May 2023, the list of discriminatory jurisdictions subject to this provision includes the states of South Carolina, Alaska, West Virginia, Wyoming, Louisiana and Hawaii.

22. COMPLIANCE WITH BREACH NOTIFICATION AND DATA SECURITY LAWS. Contractor shall comply with the provisions of the New York State Information Security Breach and Notification Act (General Business Law §§ 899-aa and 899-bb and State Technology Law § 208).

23. COMPLIANCE WITH CONSULTANT DISCLOSURE LAW. If this is a contract for consulting services, defined for purposes of this requirement to include analysis, evaluation, research, training, data processing, computer programming, engineering, environmental, health, and mental health services, accounting, auditing, paralegal, legal or similar services, then, in accordance with Section 163 (4)(g) of the State Finance Law (as amended by Chapter 10 of the Laws of 2006), the Contractor shall timely, accurately and properly comply with the requirement to submit an annual employment report for the contract to the agency that awarded the contract, the Department of Civil Service and the State Comptroller.

24. PROCUREMENT LOBBYING. To the extent this agreement is a "procurement contract" as defined by State Finance Law §§ 139-j and 139-k, by signing this agreement the contractor certifies and affirms that all disclosures made in accordance with State Finance Law §§ 139-j and 139-k are complete, true and accurate. In the event such certification is found to be intentionally false or intentionally incomplete, the State may terminate the agreement by providing written notification to the Contractor in accordance with the terms of the agreement.

25. CERTIFICATION OF REGISTRATION TO COLLECT SALES AND COMPENSATING USE TAX BY CERTAIN STATE CONTRACTORS, AFFILIATES AND SUBCONTRACTORS.
To the extent this agreement is a contract as defined by Tax Law § 5-a, if the contractor fails to make the certification required by Tax Law § 5-a or if during the term of the contract, the Department of Taxation and Finance or the covered agency, as defined by Tax Law § 5-a, discovers that the certification, made under penalty of perjury, is false, then such failure to file or false certification shall be a material breach of this contract and this contract may be terminated, by providing written notification to the Contractor in accordance with the terms of the agreement, if the covered agency determines that such action is in the best interest of the State.

26. IRAN DIVESTMENT ACT. By entering into this Agreement, Contractor certifies in accordance with State Finance Law § 165-a that it is not on the "Entities Determined to be Non-Responsive Bidders/Offerers pursuant to the New York State Iran Divestment Act of 2012" ("Prohibited Entities List") posted at: https://ogs.ny.gov/iran-divestment-act-2012

Contractor further certifies that it will not utilize on this Contract any subcontractor that is identified on the Prohibited Entities List. Contractor agrees that should it seek to renew or extend this Contract, it must provide the same certification at the time the Contract is renewed or extended. Contractor also agrees that any proposed Assignee of this Contract will be required to certify that it is not on the Prohibited Entities List before the contract assignment will be approved by the State.

During the term of the Contract, should the state agency receive information that a person (as defined in State Finance Law § 165-a) is in violation of the above-referenced certifications, the state agency will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the Act within 90 days after the determination of such violation, then the state agency shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, imposing sanctions, seeking compliance, recovering damages, or declaring the Contractor in default.

The state agency reserves the right to reject any bid, request for assignment, renewal or extension for an entity that appears on the Prohibited Entities List prior to the award, assignment, renewal or extension of a contract, and to pursue a responsibility review with respect to any entity that is awarded a contract and appears on the Prohibited Entities list after contract award.

27. ADMISSIBILITY OF REPRODUCTION OF CONTRACT. Notwithstanding the best evidence rule or any other legal principle or rule of evidence to the contrary, the Contractor acknowledges and agrees that it waives any and all objections to the admissibility into evidence at any court proceeding or to the use at any examination before trial of an electronic reproduction of this contract, in the form approved by the State Comptroller, if such approval was required, regardless of whether the original of said contract is in existence.

1. If the Contractor performs the Contract, the Surety and the Contractor shall have no obligation under the Performance Bond.

2. The Surety's obligation under this Bond shall arise after:

2.1 The State has notified the Contractor and the Surety in writing that the State is considering declaring a Contractor in default, or

2.2 The State has declared a Contractor in default and formally terminated the Contractor's right to complete the Contract, and

2.3 The State has agreed to pay the Balance of the Contract Price to the Surety or to a Contractor selected to complete the Contract in accordance with the terms of the Contract with the State.

3. The Surety shall promptly and at its own expense, take the following actions:

3.1 Undertake to perform and complete the Contract, through its agent or retained contractor; according to the following schedule:

Day 1-10 Immediately begins it investigation Advises OGS of its Representatives.

Day 10-25 Visits Site with OGS representatives to review the contract documents and completed work; and determines extent of acceptable Work.

Day 25-30 Submits proposed completion contractor, completion plan, and CPM as required, for approval by the Office of General Services.

Day 30-44 As completing contractor, the surety or its representative, presents its list of subcontractors to OGS for approval. Additionally an Insurance Certificate naming the Surety and completion Contractor as named insured must be submitted to the Contracting Officer prior to the beginning any completion of the Work. The completion plan and schedule is returned to Surety.

Day 45 Surety begins the Completion of the Work.

4. If the Surety does not proceed with reasonable promptness, the Surety shall be deemed to be in default on the Bond, and the State shall be entitled to enforce any remedy available pursuant to the terms of the contract.

5. After the State has terminated the Contractor's right to complete the Contract, and if the Surety elects to act then the responsibilities of the Surety to the State shall not be greater than those of the Contractor under the Contract, and the responsibilities of the State to the Surety shall not be greater than those provided under the Contract. To the limit of the amount of this Bond, the Surety is obligated to correct defective work and complete the work of the Contract in a timely manner.

6. The penal sum of the Performance Bond furnished by the contractor to the State, approved and filed with the Office of the State Comptroller, in no way shall be impaired or affected by any other bond that may relate to the contract in question.

END OF DOCUMENT

DOCUMENT 007305

SUPPLEMENTARY CONDITIONS - LIQUIDATED DAMAGES

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

ARTICLE 2 - DEFINITIONS

2.11 Delete this Paragraph in its entirety and replace with the following:

2.11 The term "liquidated damages" means the amount of money to be assessed against the Contractor for delay in completion of the Work.

ARTICLE 13 - TIME OF COMPLETION AND TERMINATION FOR CAUSE

13.3 Delete this Paragraph in its entirety and replace with the following:

13.3 Liquidated Damages: Should Contractor fail to substantially complete the Work within the time frame set forth in the contract, or as described in a subsequent Order(s) on Contract, the Group Director may assess Liquidated Damages for such failure in the amount of $1,000.00 per day until such time as the Group Director determines that the Work is substantially complete as defined in Section 2.21 herein. Should Contractor fail to achieve physical completion of the work within the time frame set forth in the contract, the Group Director may assess Liquidated Damages for such failure in the amount of $500.00 per day until such time as the Group Director determines that the Work is physically complete as defined in Section 2.12 herein. Notwithstanding the provisions of Article 21 herein, Contractor agrees that the Group Director may withhold the sum of the Liquidated Damages from payments to be made to Contractor as compensation to the State for administrative fees and public inconvenience.

END OF DOCUMENT

DOCUMENT 007307

SUPPLEMENTARY CONDITIONS – MWBE-EEO

CONTRACTOR REQUIREMENTS AND PROCEDURES FOR PARTICIPATION BY NEW YORK STATE CERTIFIED MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES AND EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITY GROUP MEMBERS AND WOMEN

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

ARTICLE 16 - REQUIREMENTS FOR UTILIZATION OF MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES (MWBEs)

Add the following:

16.6 Participation by Minority Group Members and Women with Respect to State Contracts: Requirements and Procedures: General Provisions:

16.6.1 OGS is required to implement the provisions of New York State Executive Law Article 15-A and 5 NYCRR Parts 140-145 ("MWBE Regulations") for all State contracts as defined therein, with a value (1) in excess of $25,000 for labor, services, equipment, materials, or any combination of the foregoing or (2) in excess of $100,000 for real property renovations and construction (the "Work").

16.6.2 The Contractor agrees, in addition to any other nondiscrimination provision of the Contract and at no additional cost to OGS, to fully comply and cooperate with OGS in the implementation of New York State Executive Law Article 15-A and the regulations promulgated thereunder. These requirements include equal employment opportunities for minority group members and women ("EEO") and contracting opportunities for MWBEs. Contractor's demonstration of "good faith efforts" pursuant to 5 NYCRR §142.8 shall be a part of these requirements. These provisions shall be deemed supplementary to, and not in lieu of, the nondiscrimination provisions required by New York State Executive Law Article 15 (the "Human Rights Law") or other applicable federal, State or local laws.

16.6.3 Failure to comply with all of the requirements herein may result in a finding of non-responsiveness, a finding of non-responsibility, a breach of contract, leading to the withholding of funds, liquidated damages pursuant to Section 27.9 herein, and/or enforcement proceedings as allowed by the Contract and applicable law.

16.7 Contract Goals:

16.7.1 OGS hereby establishes an overall goal of 30% for MWBE participation, 15% for Minority-Owned Business Enterprises ("MBE") participation and 15% for Women-Owned Business Enterprises ("WBE") participation (based on the current availability of MBEs and WBEs). The total contract goal can be obtained by utilizing any combination of MBE and /or WBE participation for subcontracting and supplies acquired under this Contract.

16.7.2 For purposes of providing meaningful participation by MWBEs on the Contract and achieving the Contract Goals established in Section 16.7.1 hereof, Contractor should reference the directory of NYS Certified MBWEs found at the following internet address:

https://ny.newnycontracts.com/FrontEnd/VendorSearchPublic.asp?TN=ny&XID=2528.

The MWBE Regulations are located at 5 NYCRR §§ 140 – 145. Additionally, Contractor is encouraged to contact the Division of Minority and Women's Business Development (518) 292-5250; (212) 803-2414; or (716) 846-8200) to discuss additional methods of maximizing participation by MWBEs on the Contract.

16.7.3 Pursuant to 5 NYCRR §142.8, Contractor must document "good faith efforts" to provide meaningful participation by MWBEs as subcontractors or suppliers in the performance of the Contract.

16.7.4 In accordance with Executive Law Section 316-a and 5 NYCRR §142.13, the Contractor acknowledges that if it is found to have willfully and intentionally failed to comply with the MWBE participation goals set forth in the Contract, such a finding constitutes a breach of contract and the Contractor shall be liable to OGS for liquidated or other appropriate damages, as set forth herein.

16.7.5 In accordance with 5 NYCRR § 142.8, Contractors must document their good faith efforts toward utilizing MWBEs on the Contract. Evidence of required good faith efforts shall include, but not be limited to, the following:

a. A list of the general circulation, trade, and MWBE-oriented publications and dates of publications in which the Contractor solicited the participation of certified MWBEs as subcontractors/suppliers, copies of such solicitations, and any responses thereto.

b. A list of certified MWBEs appearing in the Empire State Development ("ESD") MWBE directory that were solicited for this Contract. Provide proof of dates or copies of the solicitations and copies of the responses made by the certified MWBEs. Describe specific reasons that responding certified MWBEs were not selected.

c. Descriptions of the Contract documents/plans/specifications made available to certified MWBEs by the Contractor when soliciting their participation and steps taken to structure the scope of work for the purpose of subcontracting with, or obtaining supplies from, certified MWBEs.

d. A description of the negotiations between the Contractor and certified MWBEs for the purposes of complying with the MWBE goals of this Contract.

e. Dates of any pre-bid, pre-award, or other meetings attended by Contractor, if any, scheduled by OGS with certified MWBEs whom OGS determined were capable of fulfilling the MWBE goals set in the Contract.

f. Other information deemed relevant to the request.

16.7.6 The goal for participation in the conduct of the Work is expressed as a percentage equal to the dollar value of the Work performed divided by the Contract Sum. Where the cost to the Contractor of a single item of equipment exceeds twenty-five percent (25%) of the total contract price and where the Contractor has shown good faith efforts to obtain such equipment from MWBE manufacturers and suppliers, and was unsuccessful in obtaining the equipment from an MWBE, the cost of such equipment shall be deducted from the contract sum prior to computing the MWBE participation.

16.7.7 The MWBE utilization credit for Work performed by MWBEs will be determined as follows:

a. Where an MWBE is not the Contractor - MWBE utilization credit will vary depending on how the MWBE performs Work under the Contract, as follows:

i. Where the MWBE performs Work under the Contract as a subcontractor, MBE or WBE utilization credit will be 100% of the dollar value of the Work performed by the MBE or WBE.

ii. Where the MWBE performs Work under the Contract as a manufacturer, MBE or WBE utilization credit will be 100% of the dollar value of the Work performed by the MBE or WBE.

iii. Where the MWBE assists in the performance of the Work under the Contract as a supplier, MBE or WBE utilization credit will be 60% of the dollar value of the Work performed by the MBE or WBE.

iv. Where the MWBE assists in the performance of the Work under the Contract as a broker, MBE or WBE utilization credit will be equal to the percentage of the commission, or the mark-up percentage, of the items brokered, applied to the dollar value of the Work performed by the MBE or WBE.

b. Where the Contractor is a joint venture including one or more MWBEs as joint venturers, MBE or WBE utilization credit will be the Contract Sum multiplied by the percentage of the joint venture's profits (or losses) that are to accrue to the MWBE joint venturer(s) under the joint venture agreement.

c. Where any MWBE is the Contractor or where the Contractor is a joint venture consisting entirely of MWBEs, and the Contractor can document good faith efforts to subcontract to MWBE subcontractors and/or suppliers - the Contract Sum.

Add the following articles:

ARTICLE 26 – EQUAL EMPLOYMENT OPPORTUNITY (EEO)

26.1 The provisions of Article 15-A of the Executive Law and the rules and regulations promulgated thereunder pertaining to equal employment opportunities for minority group members and women shall apply to all Contractors, and any subcontractors, awarded a subcontract over $25,000 for labor, services, including legal, financial and other professional services, travel, supplies, equipment, materials, or any combination of the foregoing, to be performed, or rendered or furnished to, the contracting State agency ("the Work") except where the Work is for the beneficial use of the Contractor.

26.1.1 Contractor and Subcontractors shall undertake or continue existing EEO programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability, or marital status. For these purposes, EEO shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, and rates of pay or other forms of compensation. This requirement does not apply to: (i) the performance of work or the provision of services or any other activity that is unrelated, separate, or distinct from the Contract; or (ii) employment outside New York State.

26.1.2 By entering into this Contract, Contractor certifies that the text set forth in clause 12 of Appendix A, attached hereto and made a part hereof, is Contractor's equal employment opportunity policy. In addition, Contractor agrees to comply with the Non-Discrimination Requirements set forth in clause 5 of Appendix A.

The Contractor will include the provisions of Clause 26.1.2 and Clause 26.3 of this Article, which provides for relevant provisions of the Human Rights Law, in every subcontract in such a manner that the requirements of the subdivisions will be binding upon each subcontractor as to work in connection with the Contract.

26.2 New York State Contract System Workforce Utilization Reporting Module (Construction)

The Contractor shall submit, and shall require each of its subcontractors to submit, a Workforce Audit throughout the term of this Contract, by the 10th day of each month to report the actual workforce utilized during the previous month in the performance of the Contract by the specified categories listed including ethnic background, gender, and Federal

occupational categories. Contractor shall coordinate with its subcontractors to ensure that all workers associated with this Contract are properly counted and reported. To prepare the report, Contractor and its subcontractors shall use the New York State Contract System Workforce Audit Module found at the following website:

https://ny.newnycontracts.com/

The Workforce Audit must be submitted electronically in the New York State Contract System (NYSCS). Separate audits shall be completed by Contractor and all subcontractors. In limited instances, the Contractor or subcontractor may not be able to separate out the workforce utilized in the performance of the Contract from its total workforce. When a separation can be made, the Contractor or subcontractor shall submit the Workforce Audit and indicate that the information provided relates to the actual workforce utilized on the Contract. When the workforce to be utilized on the Contract cannot be separated out from the Contractor's or subcontractor's total workforce, the Contractor or subcontractor shall submit the Workforce Audit and indicate that the information provided is the Contractor's or subcontractor's total workforce during the subject time frame, not limited to work specifically performed under the Contract.

26.3 Contractor shall comply with the provisions of the Human Rights Law and all other State and Federal statutory and constitutional non-discrimination provisions. Contractor and subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest.

ARTICLE 27- MWBE COMPLIANCE

27.1 By entering into a Contract with OGS, Contractor certifies that it has submitted a completed MWBE Utilization Plan via the New York State Contract System (NYSCS) prior to contract award and will follow such Plan for the performance of MWBEs on the Contract pursuant to the prescribed MWBE goals set forth in Section 16.7.1 of this Supplement. The NYSCS may be accessed at **https://ny.newnycontracts.com**. The Utilization Plan shall list the MWBEs the Bidder intends to use to perform the Contract, a description of the Contract scope of work the Bidder intends the MWBE to perform to meet the goals on the Contract, and the estimated, or if known, actual dollar amounts to be paid to an MWBE. If Contractor is unable to submit such Plan through the NYSCS, Contractor certifies that it used Form BDC 328 (Contractor's Utilization Plan) to submit the Plan. The BDC 328 form is available for download at https://ogs.ny.gov/mwbe/forms.

27.2 By entering into the Contract, Bidder/Contractor understands that only sums paid to MWBEs for the performance of a commercially useful function, as that term is defined in 5 NYCRR § 140.1, may be applied towards the achievement of the applicable MWBE participation goal. When an MWBE is serving as a broker on the Contract, only 25 percent of all sums paid to a broker shall be deemed to represent the commercially useful function performed by the MWBE.

27.3 OGS will review the submitted MWBE Utilization Plan and advise the Bidder of OGS' acceptance or issue a notice of deficiency within 30 calendar days of receipt. Contractor understands that making false representations or including information evidencing a lack of good faith as part of, or in conjunction with, the submission of a Utilization Plan is prohibited by law and may result in penalties including, but not limited to, termination of a contract for cause, loss of eligibility to submit future bids, and/or withholding of payments.

27.4 Contractor further agrees that a failure to submit and/or use such MWBE Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, OGS shall be entitled to any remedy provided herein, including but not limited to, a finding of Contractor non-responsiveness.

27.5 Access to the Contractor's Books: The Contractor shall permit access to its books, records and accounts by the State for purposes of investigation to ascertain compliance with the provisions of this Article. The contractor shall include this provision in every subcontract so that such provision will be binding upon each subcontractor.

27.6 If the Contractor, after making good faith efforts, is unable to comply with MWBE goals, the Contractor may submit an Application for MWBE Waiver form (BDC 333) documenting good faith efforts by the Contractor to meet such goals. If the documentation included with the waiver request is complete, OGS shall evaluate the request and issue a written notice of acceptance or denial within twenty (20) business days of receipt.

27.7 If OGS, upon review of the MWBE Utilization Plan and updated Contractors list of Subcontractors and Suppliers determines that Contractor is failing or refusing to comply with the Contract goals and no waiver has been issued in regards to such non-compliance, OGS may issue a notice of deficiency to the Contractor. The Contractor must respond to the notice of deficiency within seven (7) business days of receipt. Such response may include a request for partial or total waiver of MWBE Contract Goals.

27.8 **Monthly MWBE Contractor Compliance Report**

27.8.1 In accordance with 5 NYCRR § 142.10, Contractor is required to report Monthly MWBE Contractor Compliance to OGS during the term of the Contract for the preceding month's activity, documenting progress made towards achievement of the Contract MWBE goals. OGS requests that all Contractors use the NYSCS to report subcontractor and supplier payments made by Contractor to MWBEs performing work under the Contract. The NYSCS may be accessed at **https://ny.newnycontracts.com**. This is a New York State-based system that all State agencies and authorities will be implementing to ensure uniform contract compliance reporting throughout New York State.

27.8.2 When a Contractor receives a payment from OGS under an OGS contract, it is the Contractor's responsibility to pay its subcontractors and suppliers in a timely manner. On or after the first day of each month, the Contractor will receive an e-mail or fax notification ("audit notice") indicating that a representative of its company needs to log-in to the NYSCS to report the company's MWBE subcontractor and supplier payments for the preceding month. The Contractor must also report when no payments have been made to a subcontractor or supplier in a particular month with entry of a zero dollar value in the NYSCS. Once subcontractor and supplier payments have been entered into the NYSCS, the subcontractor(s) and supplier(s) will receive an email or fax notification advising them to log into the NYSCS to confirm that they actually received the reported payments from the Contractor. It is the Contractor's responsibility to educate its MWBE subcontractors and suppliers about the NYSCS and the need to confirm payments made to them in the NYSCS.

27.8.3 To assist in the use of the NYSCS, OGS recommends that all Contractors and MWBE subcontractors and suppliers sign up for the following two webinar trainings offered through the NYSCS: "Introduction to the System – Vendor Training" and "Contract Compliance Reporting - Vendor Training" to become familiar with the NYSCS. To view the training schedule and to register visit:

https://ny.newnycontracts.com/events.asp.

27.8.4 As soon as possible after the Contract is approved, Contractor should visit https://ny.newnycontracts.com and click on "Account Lookup" to identify the Contractor's account by company name. Contact information should be reviewed and updated if necessary by choosing "Change Info." It is important that the staff member who is responsible for reporting payment information for the Contractor be listed as a user in the NYSCS. Users who are not already listed may be added through "Request New User." When identifying the person responsible, please add "- MWBE Contact" after their last name (i.e., John Doe – MWBE Contact) to ensure that the correct person receives audit notices from the NYSCS. NYSCS Technical Support should be contacted for any technical support questions by clicking on the links

for “Contact Us & Support” then “Technical Support” on the NYSCS website.

27.8.5 If Contractor is unable to report MWBE Contractor Compliance via the NYSCS, Contractor must submit Contractor’s Monthly Payment Report on Form BDC 58 to OGS, by the 10th day of each month during the term of the Contract, for the preceding month’s activity to: OGS OBD, 29th Floor Corning Tower, Empire State Plaza, Albany, NY 12242. Phone: 518-486-9284; Fax: 518-486-9285.

27.8.6 It is the Contractor’s responsibility to report subcontractor and supplier payments. Failure to respond to payment audits in a timely fashion through the NYSCS, or by paper to OGS, may jeopardize future payments pursuant to the MWBE liquidated damages clause in Section 27.9 below.

27.9 Liquidated Damages – MWBE Participation

27.9.1 Where OGS determines that Contractor is not in compliance with the requirements of the Contract and Contractor refuses to comply with such requirements, or if Contractor is found to have willfully and intentionally failed to comply with the MWBE participation goals, Contractor shall be obligated to pay liquidated damages to OGS.

27.9.2 Such liquidated damages shall be calculated as an amount equaling the difference between:

a. All sums identified for payment to MWBEs had the Contractor achieved the contractual MWBE goals; and

b. All sums actually paid to MWBEs for work performed or materials supplied under the Contract.

27.9.3 After the Contractor has been afforded the process it is due, if OGS determines that Contractor is liable for liquidated damages and such identified sums have not been withheld by OGS, Contractor shall pay such liquidated damages to OGS within sixty (60) days after they are assessed. Provided, however, that if the Contractor has filed a complaint with the Director of the Division of Minority and Women’s Business Development pursuant to 5 NYCRR § 142.12, liquidated damages shall be payable only in the event of a determination adverse to the Contractor following the complaint process.

27.10 Any suspicion of fraud, waste, or abuse involving the contracting or certification of MWBEs shall be immediately reported to ESD’s Division of Minority and Women’s Business Development at (855) 373-4692.

DOCUMENT 007308

SUPPLEMENTARY CONDITIONS – BUY AMERICA PREFERENCE

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

ARTICLE 25 – MISCELLANEOUS PROVISIONS

25.4 Delete this Paragraph in its entirety and replace with the following:

25.4 BUY AMERICA PREFERENCE

Recipients of an award of Federal financial assistance from a program for infrastructure are hereby notified that none of the funds provided under this award may be used for an infrastructure project unless:

(1) All iron and steel used in the project are produced in the United States—this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States;

(2) All manufactured products used in the project are produced in the United States— this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard that meets or exceeds this standard has been established under applicable law or regulation for determining the minimum amount of domestic content of the manufactured product; and

(3) All construction materials are manufactured in the United States—this means that all manufacturing processes for the construction material occurred in the United States. The construction material standards are listed below.

Incorporation into an infrastructure project. The Buy America Preference only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America Preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project, but are not an integral part of the structure or permanently affixed to the infrastructure project.

Categorization of articles, materials, and supplies. An article, material, or supply should only be classified into one of the following categories: (i) Iron or steel products; (ii) Manufactured products; (iii) Construction materials; or (iv) Section 70917(c) materials. An article, material, or supply should not be considered to fall into multiple categories. In some cases, an article, material, or supply may not fall under any of the categories listed in this paragraph. The classification of an article, material, or supply as falling into one of the categories listed in this paragraph must be made based on its status at the time it is brought to the work site for incorporation into an infrastructure project. In general, the work site is the location of the infrastructure project at which the iron, steel, manufactured products, and construction materials will be incorporated.

Application of the Buy America Preference by category. An article, material, or supply incorporated into an infrastructure project must meet the Buy America Preference for only the single category in which it is classified.

Determining the cost of components for manufactured products. In determining whether the cost of components for manufactured products is greater than 55 percent of the total cost of all components, use the following instructions:

(a) For components purchased by the manufacturer, the acquisition cost, including transportation costs to the place of incorporation into the manufactured product (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(b) For components manufactured by the manufacturer, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (a), plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the manufactured product.

Construction material standards. The Buy America Preference applies to the following construction materials incorporated into infrastructure projects. Each construction material is followed by a standard for the material to be considered "produced in the United States." Except as specifically provided, only a single standard should be applied to a single construction material.

(1) Non-ferrous metals. All manufacturing processes, from initial smelting or melting through final shaping, coating, and assembly, occurred in the United States.

(2) Plastic and polymer-based products. All manufacturing processes, from initial combination of constituent plastic or polymer-based inputs, or, where applicable, constituent composite materials, until the item is in its final form, occurred in the United States.

(3) Glass. All manufacturing processes, from initial batching and

melting of raw materials through annealing, cooling, and cutting, occurred in the United States.

(4) Fiber optic cable (including drop cable). All manufacturing processes, from the initial ribboning (if applicable), through buffering, fiber stranding and jacketing, occurred in the United States. All manufacturing processes also include the standards for glass and optical fiber, but not for non-ferrous metals, plastic and polymer-based products, or any others.

(5) Optical fiber. All manufacturing processes, from the initial preform fabrication stage through the completion of the draw, occurred in the United States.

(6) Lumber. All manufacturing processes, from initial debarking through treatment and planing, occurred in the United States.

(7) Drywall. All manufacturing processes, from initial blending of mined or synthetic gypsum plaster and additives through cutting and drying of sandwiched panels, occurred in the United States.

(8) Engineered wood. All manufacturing processes from the initial combination of constituent materials until the wood product is in its final form, occurred in the United States.

Waivers

At any time after award of a construction contract, if a vendor identifies that a material or component cannot be obtained in accordance with Buy America, a waiver request may be submitted to the Director's Representative. Waivers may be requested if:

1. The types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or

2. The inclusion of iron, steel, manufactured products or construction materials produced in the United States will increase the cost of the overall project by more than 25%

Waiver requests must be submitted to the Director's Representative in writing prior to purchase of the non-compliant component or material from a manufacturer or distributor. Waivers must be approved by the Made in America Office and are subject to a public comment period of not less than 15 days.

Definitions

"Buy America Preference" means the "domestic content procurement preference" set forth in section 70914 of the Build America, Buy America Act, which requires the

head of each Federal agency to ensure that none of the funds made available for a Federal award for an infrastructure project may be obligated unless all of the iron, steel, manufactured products, and construction materials incorporated into the project are produced in the United States.

"Construction materials" means articles, materials, or supplies that consist of only one of the items listed in paragraph (1) of this definition, except as provided in paragraph (2) of this definition. To the extent one of the items listed in paragraph (1) contains as inputs other items listed in paragraph (1), it is nonetheless a construction material.

(1) The listed items are:

(i) Non-ferrous metals;
(ii) Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
(iii) Glass (including optic glass);
(iv) Fiber optic cable (including drop cable);
(v) Optical fiber;
(vi) Lumber;
(vii) Engineered wood; and
(viii) Drywall.

(2) Minor additions of articles, materials, supplies, or binding agents to a construction material do not change the categorization of the construction material.

"Infrastructure" means public infrastructure projects in the United States, which includes, at a minimum, the structures, facilities, and equipment for roads, highways, and bridges; public transportation; dams, ports, harbors, and other maritime facilities; intercity passenger and freight railroads; freight and intermodal facilities; airports; water systems, including drinking water and wastewater systems; electrical transmission facilities and systems; utilities; broadband infrastructure; and buildings and real property; and structures, facilities, and equipment that generate, transport, and distribute energy including electric vehicle (EV) charging.

"Infrastructure project" means any activity related to the construction, alteration, maintenance, or repair of infrastructure in the United States regardless of whether infrastructure is the primary purpose of the project. See also paragraphs (c) and (d) of 2 CFR 184.4.

"Iron or steel products" means articles, materials, or supplies that consist wholly or predominantly of iron or steel or a combination of both.

“Manufactured products” means:

(1) Articles, materials, or supplies that have been:

(i) Processed into a specific form and shape; or
(ii) Combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies.

(2) If an item is classified as an iron or steel product, a construction material, or a Section 70917(c) material under 2 CFR 184.4(e) and the definitions set forth in 2 CFR 184.3, then it is not a manufactured product. However, an article, material, or supply classified as a manufactured product under 2 CFR 184.4(e) and paragraph (1) of this definition may include components that are construction materials, iron or steel products, or Section 70917(c) materials.

“Predominantly of iron or steel or a combination of both” means that the cost of the iron and steel content exceeds 50 percent of the total cost of all its components. The cost of iron and steel is the cost of the iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the product and a good faith estimate of the cost of iron or steel components.

“Section 70917(c) materials” means cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives. See Section 70917(c) of the Build America, Buy America Act.

END OF DOCUMENT

DOCUMENT 007310

SUPPLEMENTARY CONDITIONS - CONTRACTOR'S SUPERVISION

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

ARTICLE 6 - CONTRACTOR'S SUPERVISION

ARTICLE 6 Delete this Article in its entirety and replace with the following:

6.1 The Contractor shall designate in writing, competent supervision and/or management representatives as required below to represent the Contractor at all times with authority to act for the Contractor. All direction given to the Contractor's representatives shall be as binding as if given to the Contractor. A superintendent or project manager shall be classified as management representatives included in the Contractor's overhead and shall perform management, supervisory and/or administrative tasks (non labor) only. Individuals listed under this Article shall have the ability to effectively communicate (verbal and written) with all parties associated with the administration/supervision of this contract.

6.1.1 For contracts awarded up to $1,000,000 the Contractor shall provide a supervisor, for the Contractor's staff, who shall be in attendance at the Site throughout the active performance of the Work, including active performance of the Work by subcontractors.

6.1.2 For contracts awarded from $1,000,001 to $5,000,000, the Contractor shall provide a superintendent, for the Contractor's staff, who shall be in attendance at the Site throughout the active performance of the Work until Substantial Completion. Upon Substantial Completion the Contractor shall provide a supervisor who shall be in attendance at the Site throughout the active performance of the Work until Physical Completion. The superintendent's responsibilities include, but are not limited to, directing and scheduling the Work, attending all Project meetings, coordinating and controlling the Work of subcontractors, and ensuring full compliance with the Contract documents. The Contractor shall also provide a project manager for the Contractor's staff from award through Substantial Completion. The Project Manager's responsibilities shall include, but are not limited to, developing and maintaining the submittal system and project schedules, attending Project meetings, making purchasing and cost decisions on behalf of the Contractor, Orders on Contract responses and negotiations, and closeout and warranty documentation. The Contractor shall provide required information to the Director's Representative for the Project schedule.

6.1.3 For contracts awarded from $5,000,001 to $10,000,000, in addition to the requirements of Article 6.1.2, the contractor shall provide a Project Manager for the Contractor's staff that shall be in attendance at the site throughout the active performance of the Work until Substantial Completion.

6.1.4 For contracts awarded for more than $10,000,000, in addition to the requirements set forth in Article 6.1.3, if at any time the Contractor has more than five subcontractors performing Work on the Site simultaneously, the Contractor shall provide an additional Superintendent to coordinate the Work of the subcontractors.

6.2 Should the Director deem any employees of the Contractor not satisfactory or unfit for their duty, the Contractor shall dismiss them and they shall not again be employed on the Work.

6.2.1 Infractions that are dismissible for project managers, superintendents, or supervisors include, but are not limited to, the failure to develop and maintain Project schedules, failure to comply and enforce safety regulations, failure to schedule inspections or provide adequate notice as required by Contract Documents, failure to attend and adequately prepare for meetings as required by Contract Documents, and failure to follow directions regarding the Work provided by the Director's Representative.

6.3 The experience levels noted below in this Article will be used in evaluating the qualifications and experience of the supervisors, superintendents, and Project Managers, as applicable.

6.3.1 Supervisors, required by paragraph 6.1.1, shall have a minimum of five years of experience in the role of supervisor with a minimum of three projects of similar size and scope, and shall be subject to review and written approval by the Director's Representative before commencing the Work, and subsequently during the course of the Project if the supervisor is replaced after Work has commenced. The Contractor will provide references to validate qualifications of the proposed supervisor upon request.

6.3.2 Superintendents, required for any contracts awarded above $1,000,000 as set forth in Article 6.1.2, shall have a minimum of five years of experience in the role of Superintendent with a minimum of three projects of similar size and scope, and shall be subject to review and written approval by the Director's Representative before commencing the Work, and subsequently during the course of the Project if the Superintendent is replaced after Work has commenced. The Contractor will provide references to validate qualifications of the proposed Superintendent upon request.

6.3.3 The Project Manager, required for any contracts awarded above $1,000,000 as set forth in Article 6.1.2, shall have a minimum of five years of experience in the role of Project Manager with a minimum of three projects of similar size and scope, and shall be subject to review and written approval by the Director's Representative before commencing the Work, and subsequently during the course of the Project if the Project Manager is replaced after Work has commenced. The Contractor will provide references to validate qualifications of the proposed Project Manager upon request.

6.4 No subcontractor shall be allowed at the Work Site before approval by the Director and the Contracting Officer. Before any part of the Contract shall be sublet or material purchased, the Contractor shall submit to the Director in writing the name of each proposed subcontractor and supplier and obtain the Director's written consent to such subcontractor and supplier. The names shall be submitted in ample time to permit acceptance or rejection of each proposed subcontractor and supplier by the Director or Contracting Officer without causing delay in the Work of the Project. The Contractor shall promptly furnish such information as the Director or Contracting Officer may require concerning the proposed subcontractor's and supplier's ability and qualifications, and certification status as a Minority- and Women-Owned Business Enterprises and/or Service-Disabled Veteran-Owned Business. For each proposed subcontractor, the Contractor shall also provide the New York State Department of Labor registration number in accordance with NYS Labor Law Section 220-i. Each request for approval of a subcontractor whose subcontract will be valued at $10,000 or more shall also be accompanied by a NYS Vendor Responsibility Questionnaire - For-Profit Construction properly completed and executed by the proposed subcontractor.

6.5 The Contractor's use of subcontractors shall not diminish the Contractor's obligations to complete the Work in accordance with the Contract. The Contractor shall control and coordinate the Work of its subcontractors.

6.6 The Contractor shall be responsible for informing its subcontractors and suppliers of all the terms, conditions and requirements of the Contract Documents including, but not limited to, the General Conditions, Supplementary Conditions, the Drawings and Specifications, Appendix A, and changes made by Addenda and Orders on Contract.

END OF DOCUMENT

DOCUMENT 007311

SUPPLEMENTARY CONDITIONS – PAYMENT

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

ARTICLE 21 - PAYMENT

Add the following sub-paragraph:

21.2.1 The Director or the Contracting Officer may withhold payment requisitions or refuse to approve a portion of a payment requisition if the Contractor fails to provide an agreed to Baseline Project Work Plan, Project Schedule Updates, Recovery Project Schedule, or other scheduling requirements in accordance with Division 01 - General Requirements.

END OF DOCUMENT

DOCUMENT 007322

SUPPLEMENTARY CONDITIONS - WORKERS' COMPENSATION

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provision of that part shall remain in effect.

ARTICLE 19 - INSURANCE - BUILDER'S RISK, LIABILITY AND WORKERS' COMPENSATION

Add the following paragraphs to 19.2.1:

The contractor agrees that pursuant to WCL Section 141-b, this contract may be terminated if it is determined that at the time of either the bid submission or contract award, the contractor was, in fact, debarred by WCL Section 141-b, or was a substantially owned affiliate of a debarred contractor.

Additionally, the contractor agrees that it must replace, at no additional charge to the State, any subcontractor who the State or the contractor learns was debarred by WCL Section 141-b prior to or during the contract.

END OF DOCUMENT

DOCUMENT 007323

SUPPLEMENTARY CONDITIONS – VENDOR RESPONSIBILITY

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provision of that part shall remain in effect.

ARTICLE 25 - MISCELLANEOUS PROVISIONS

Add the following paragraphs:

25.10 VENDOR RESPONSIBILITY: Contractor shall at all times during the Contract term remain responsible. Contractor agrees, if requested by the Commissioner of OGS or his or her designee, to present evidence of its continuing legal authority to do business in New York State, integrity, experience, ability, prior performance, and organizational and financial capacity.

The Commissioner of OGS or his or her designee, in his or her sole discretion, reserves the right to suspend any or all activities under this Contract, at any time, when he or she discovers any information that calls into question the responsibility of Contractor. In the event of such suspension, Contractor will be given written notice outlining the particulars of such suspension. Upon issuance of such notice, Contractor must comply with the terms of the suspension order. Contract activity may resume at such time as the Commissioner of OGS or his or her designee issues a written notice authorizing a resumption of performance under the contract.

Upon written notice to Contractor, and a reasonable opportunity to be heard with appropriate OGS officials or staff, the Contract may be terminated by the Commissioner of OGS or his or her designee at Contractor's expense where Contractor is determined by the Commissioner of OGS or his or her designee to be non-responsible. In such event, the Commissioner of OGS or his or her designee may complete the contractual requirements in any way he or she may seem advisable and pursue available legal or equitable remedies for breach.

In no case shall termination of the contract by the state be deemed a breach thereof, nor shall the state be liable for any damages or lost profits or otherwise, which may be sustained by Contractor as a result of such termination.

END OF DOCUMENT

DOCUMENT 007324

SUPPLEMENTARY CONDITIONS - ENCOURAGING USE OF NEW YORK STATE BUSINESSES IN CONTRACT PERFORMANCE

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

ARTICLE 25 – MISCELLANEOUS PROVISIONS

Add the following paragraphs:

25.11 Encouraging New York State Businesses

New York State businesses have a substantial presence in State contracts and strongly contribute to the economies of the state and the nation. In recognition of their economic activity and leadership in doing business in New York State, bidders/proposers for this contract are strongly encouraged and expected to consider New York State businesses in the fulfillment of the requirements of the contract. Such partnering may be as subcontractors, suppliers, protégés or other supporting roles.

Bidders need to be aware that all government entities benefiting from this contract will be strongly encouraged, to the maximum extent practical and consistent with legal requirements, to use responsible and responsive New York State businesses in purchasing commodities that are of equal quality and functionality and in utilizing services and technology. Furthermore, bidders are reminded that they must continue to utilize small, minority and women-owned businesses, consistent with current State law.

Utilizing New York State businesses in State contracts will help create more private sector jobs, rebuild New York's infrastructure, and maximize economic activity to the mutual benefit of the contractor and its New York State business partners. New York State businesses will promote the contractor's optimal performance under the contract, thereby fully benefiting the public sector programs that are supported by associated procurements.

Public procurements can drive and improve the State's economic engine through promotion of the use of New York businesses by its contractors. The State therefore expects bidders to provide maximum assistance to New York businesses in their use of the contract. The potential participation by all kinds of New York businesses will deliver great value to the State and its taxpayers.

Bidders can demonstrate their commitment to the use of New York State businesses by responding to the question shown below ***on the Bid Form for this project***:

Will New York State Businesses be used in the performance of this contract? _____ _____
Yes No

The successful bidder who answers "Yes" to this question on the bid form will be required to list the New York State business(es) that will be used on the **Contractor's List of Subcontractors/Suppliers** (Form BDC 329), which must be submitted within ***fifteen (15) days after award*** of the contract.

END OF DOCUMENT

DOCUMENT 007326

SUPPLEMENTARY CONDITIONS - ORDERS ON CONTRACT (CHANGE ORDERS)

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provision of that part shall remain in effect.

ARTICLE 10 - ORDERS ON CONTRACT (CHANGE ORDERS)

Replace paragraph 10.1 with the following:

10.1 The State may make changes by altering, adding to or deleting from the Work, and adjusting the Contract sum accordingly. All changed Work shall be executed in conformity with the terms and conditions of the Contract Documents unless otherwise provided in the order on contract. Any change in the Contract sum or time for completion of the described work of the order on contract shall be contained in the order on contract. The Contractor shall complete a time impact analysis (TIA) pursuant to specification section 013113 concurrently with the pricing of the order on contract. Potential time adjustments shall be determined based on the TIA with presented costs. If the Work of the order on contract impacts the substantial completion date, the Contractor must notify the Director's Representative prior to the negotiation of the order on contract and a time adjustment may be issued. If the Contractor does not develop a time impact analysis during the negotiation of an order on contract, the Contractor shall forfeit their right to a time adjustment.

Replace paragraph 10.5.1 with the following:

10.5.1 The contractor shall submit a responsive cost proposal to the Director's Representative in proper form subject to the provisions of this Article. The contractor shall respond no later than 15 calendar days from the date of a "request for proposal" from the Director's Representative with their cost proposal and time impact analysis (TIA). If the contractor believes additional time is required to prepare and submit a responsive proposal, a justification and proposed response duration must be submitted to the Director's Representative or his/her designated representative within 10 days from the date of a "request for proposal". If approved, the 10-day requirement will be extended as the State may deem appropriate. Should the contractor fail to respond or fail to submit the required cost proposal within the 15-day requirement, the State shall determine a fair market value for the work proposed and will issue an order on contract or field order to the contract. The Contractor, by failing to respond to a request for proposal or provide an acceptable and responsive cost proposal; waives any claim or rights to any extra and or additional costs and/or time as may be determined by the Contracting Officer, and the overrides resulting from this action will be limited to the values as set forth in section 012200.

END OF DOCUMENT

DOCUMENT 007327

SUPPLEMENTARY CONDITIONS – SDVOB

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

Add the following article:

ARTICLE 28 – PARTICIPATION OPPORTUNITIES FOR NEW YORK STATE CERTIFIED SERVICE-DISABLED VETERAN-OWNED BUSINESSES

Article 3 of the Veterans' Services Law provides for more meaningful participation in public procurement by certified Service-Disabled Veteran-Owned Businesses ("SDVOB"), thereby further integrating such businesses into New York State's economy. OGS recognizes the need to promote the employment of service-disabled veterans and to ensure that certified service-disabled veteran-owned businesses have opportunities for maximum feasible participation in the performance of OGS contracts.

In recognition of the service and sacrifices made by service-disabled veterans and in recognition of their economic activity in doing business in New York State, Bidders are expected to consider SDVOBs in the fulfillment of the requirements of the Contract. Such participation may be as subcontractors or suppliers, as protégés, or in other partnering or supporting roles.

28.1 Contract Goals

28.1.1 OGS hereby establishes overall goals under this contract of 6% for SDVOB participation for the C trade contractor, 3% for SDVOB participation for the E trade contractor, 3% for SDVOB participation for the H trade contractor, and 3% for SDVOB participation for the P trade contractor, based on the current availability of qualified SDVOBs. Trades with 0% goals are encouraged to make "good faith efforts" to promote and assist in the participation of SDVOBs on the Contract for the provision of services and materials. For purposes of providing meaningful participation by SDVOBs, the Bidder/Contractor should refer to the **List of Certified NYS Service-Disabled Veteran-Owned Businesses**, which can be accessed from the OGS website page at the following link:

https://online.ogs.ny.gov/SDVOB/search .

Questions regarding compliance with SDVOB participation goals should be directed to the Designated Contacts specified in Document 002113 Instructions to Bidders. Additionally, following Contract execution, Contractor is encouraged to contact DCSDVOB@ogs.ny.gov to discuss additional methods of maximizing participation by SDVOBs on the Contract.

28.1.2 Contractor must document "good faith efforts" to provide meaningful participation by SDVOBs as subcontractors or suppliers in the performance of the Contract (see clause 28.4 below).

28.2. SDVOB Utilization Plan

28.2.1 The Contractor's SDVOB Utilization Plan, using the form BDC 328S, available for download at https://ogs.ny.gov/veterans/forms, shall list the SDVOBs that the Bidder intends to use to perform the Contract, a description of the work that the Bidder intends the SDVOB to perform to meet the goals on the Contract, and the estimated dollar amounts to be paid to an SDVOB, or, if not known, an estimate of the percentage of Contract work the SDVOB will perform. By signing the Utilization Plan, the Bidder acknowledges that making false representations or providing information that shows a lack of good faith as part of, or in conjunction with, the submission of a Utilization Plan is prohibited by law and may result in

penalties including, but not limited to, termination of a contract for cause, loss of eligibility to submit future bids, and/or withholding of payments. Any modifications or changes to the agreed participation by SDVOBs after the Contract award and during the term of the Contract must be reported on a revised SDVOB Utilization Plan and submitted to OGS.

28.2.2 The apparent low bidder must submit the completed SDVOB Utilization Plan within seven (7) calendar days after the bids are opened. OGS will review the submitted SDVOB Utilization Plan and advise the bidder of OGS acceptance or issue a notice of deficiency within twenty (20) calendar days of receipt.

28.2.3 If a notice of deficiency is issued, Bidder/Contractor agrees that it shall respond to the notice of deficiency, within nine (9) calendar days of receipt, by submitting to OGS a written remedy in response to the notice of deficiency. If the written remedy that is submitted is not timely or is found by OGS to be inadequate, OGS shall notify the Bidder/Contractor and direct the Bidder/Contractor to submit, within seven (7) calendar days of notification by OGS, a request for a partial or total waiver of SDVOB participation goals on form BDC 333S. Failure to file the waiver form in a timely manner may be grounds for disqualification of the bid or proposal.

28.2.4 OGS may disqualify a Bidder's bid or proposal as being non-responsive under the following circumstances:

a. If a Bidder fails to submit an SDVOB Utilization Plan;

b. If a Bidder fails to submit a written remedy to a notice of deficiency;

c. If a Bidder fails to submit a request for waiver; or

d. If OGS determines that the Bidder has failed to document good faith efforts.

28.2.5 If awarded a Contract, Contractor certifies that it will follow the submitted SDVOB Utilization Plan for the performance of SDVOBs on the Contract pursuant to the prescribed SDVOB contract goals set forth in this section.

28.2.6 Contractor further agrees that a failure to use SDVOBs as agreed in the Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, OGS shall be entitled to any remedy provided herein, including but not limited to, a finding of Contractor non-responsibility.

28.3 Request for Waiver

28.3.1 In accordance with 9 NYCRR § 252.2(m), a Bidder/Contractor that is able to document good faith efforts to meet the goal requirements, as set forth in 28.4 below, may submit a request for a partial or total waiver on form BDC 333S (https://ogs.ny.gov/veterans/forms), accompanied by supporting documentation. A Bidder may submit the request for waiver at the same time it submits its SDVOB Utilization Plan. If a request for waiver is submitted with the SDVOB Utilization Plan and is not accepted by OGS at that time, the provisions of clauses 28.2.2, 28.2.3 and 28.2.4 will apply. If the documentation included with the waiver request is complete, OGS shall evaluate the request and issue a written notice of acceptance or denial within 20 days of receipt.

28.3.2 Contractor shall attempt to utilize, in good faith, the SDVOBs identified within its SDVOB Utilization Plan, during the performance of the Contract. Requests for a partial or total waiver of established goal requirements made subsequent to Contract award may be made at any time during the term of the Contract to OGS, but must be made prior to the submission of a request for final payment on the Contract. Such waiver requests shall be made on form BDC 333S, accompanied by supporting documentation, and emailed to ogs.sm.sdvobcomp@ogs.ny.gov.

28.3.3 If OGS, upon review of the SDVOB Utilization Plan (BDC 328S) and Contractor's Monthly SDVOB Payment Report (BDC 58S), determines that Contractor is failing or refusing to comply with the contract goals and no waiver has been issued in regards to such non-compliance, OGS may issue a notice of deficiency to the Contractor. The Contractor must respond to the notice of deficiency within nine (9) calendar days of receipt. Such response may include a request for partial or total waiver of SDVOB contract goals.

28.4 Required Good Faith Efforts

In accordance with 9 NYCRR § 252.2(n), Contractors must document their good faith efforts toward utilizing SDVOBs on the Contract. Evidence of required good faith efforts shall include, but not be limited to, the following:

a. A list of the general circulation, trade, and other publications and dates of publications in which the Contractor solicited the participation of certified SDVOBs as subcontractors/suppliers, copies of such solicitations, and any responses thereto.

b. A list of certified SDVOBs that were solicited for this Contract. Provide proof of dates or copies of the solicitations and copies of the responses made by the certified SDVOBs. Describe specific reasons that responding certified SDVOBs were not selected.

c. Descriptions of the Contract documents, plans and specifications made available to certified SDVOBs by the Contractor when soliciting their participation and steps taken to structure the scope of work for the purpose of subcontracting with, or obtaining supplies from, certified SDVOBs.

d. A description of the negotiations between the Contractor and certified SDVOBs for the purposes of complying with the SDVOB goals of this Contract.

e. Dates of any pre-bid, pre-award, or other meetings attended by Contractor, if any, scheduled by OGS with certified SDVOBs whom OGS determined were capable of fulfilling the SDVOB goals set in the Contract.

f. Other information deemed relevant to the request.

28.5 Monthly SDVOB Contractor Compliance Report

In accordance with 9 NYCRR § 252.2(q), Contractor is required to report Monthly SDVOB Contractor Compliance each month to OGS during the term of the Contract for the preceding month's activity, documenting progress made towards achieving the Contract SDVOB goals. This information must be reported by the Contractor using form BDC 58S (form and instructions located at https://ogs.ny.gov/veterans/forms) and emailed by the 10th day of each month for the preceding month's activity to ogs.sm.sdvobcomp@ogs.ny.gov.

28.6 Breach of Contract and Damages

In accordance with 9 NYCRR § 252.2(s), any Contractor found to have willfully and intentionally failed to comply with the SDVOB participation goals set forth in the Contract shall be found to have breached the contract and Contractor shall pay damages as set forth therein.

END OF DOCUMENT

DOCUMENT 007331

SUPPLEMENTARY CONDITIONS – LABOR LAW PROVISIONS

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

ARTICLE 23 – LABOR LAW PROVISIONS

Add the following paragraph:

23.7 In accordance with New York Labor Law §220-i, the Contractor and all subcontractors shall be registered with the New York State Department of Labor prior to commencing any Work. The Contractor is responsible for ensuring and verifying that all subcontractors are registered before they commence work on the project. Any delays or costs incurred due to a Contractor's or subcontractor's failure to be registered, or the Contractor's failure to verify such registration, shall be borne solely by the Contractor and shall not be grounds for an extension of time or additional compensation.

END OF DOCUMENT

SECTION 011000.01 - SUMMARY OF THE WORK

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

A. The title and location of the Work is printed on the cover of this Project Manual.

B. Type of Contract: Fixed price.

1.2 RELATED CONTRACTS

A. The Project consists of the following separate contracts:

1. Construction Work Project No. 47477- C
2. HVAC Work Project No. 47477- H
3. Plumbing Work Project No. 47477- P
4. Electrical Work Project No. 47477- E

B. The suffix letter at the end of the project number distinguishes the separate Contracts. The Sections in Division 01 of the Specifications which have more than one suffix letter (such as this Section) are common to each related Contract.

1.3 SUBSTANTIAL AND PHYSICAL COMPLETION DATES

A. Substantially complete the Work within 631 days after the Agreement is approved by the Comptroller.

1. The time allocated for the performance of work under this contract includes 10 days for notification of the Contractor of the Comptroller's approval of the Agreement.
2. The approval of the Agreement by the Comptroller constitutes the filing of the Contract Documents as a public record and notice to the Contractor that a fully executed contract exists between the Contractor and the State.

B. Physically complete the Work within 90 days after the established Substantial Completion date.

1.4 CONTRACT AWARD SUBMITTALS

A. Submittal No. 1: Submit the CONTRACTOR'S LIST OF SUBCONTRACTORS-SUPPLIERS information required in SCHEDULES AND RECORDS Article in Specification Section 013000 not later than 15 days after approval of the Contract by the Comptroller.

B. Submittal No. 2: Submit Preliminary Project Schedule related information noted in 013113 Project Planning and Scheduling or 013200 Construction Progress Documentation, whichever

section is applicable, within 15 days after approval of the Contract by the Comptroller for review by the Director's Representative and OGS Scheduling.

C. Submittal No. 3: Submit the Submittal Coordinator Qualifications not later than 10 days after award. Include resume and references, and other certification, licenses, or other requested information.

1.5 RESTRICTED WORK PERIOD

A. Construction Work Contract: Do not perform the roofing and related Work on or after December 1st and up to, but not including April 1st unless approved otherwise, in writing, by the Director. During this period, clear the roof of materials, equipment, and debris. Maintain the roof in a watertight condition.

B. Construction Work Contract: Do not perform the waterproofing and related Work on or after December 1st and up to, but not including April 1st unless approved otherwise, in writing, by the Director. During this period, clear the work area of materials, equipment, and debris.

C. Construction Work Contract: Do not perform the asphalt paving Work on or after November 15th and up to, but not including April 15th, unless approved otherwise, in writing, by the Director. During this period, leave the disturbed earthwork areas stabilized for winter shutdown and clear the Work area of materials, equipment, and debris.

D. HVAC Work Contract: Do not perform Work requiring shut off of active heating piping and equipment on or after October 15th and up to, but not including May 1st unless approved otherwise, in writing, by the Director.

E. Asbestos-containing materials will be abated by the Construction Work Contractor. Do not perform other Work in the area of such activity during the abatement of asbestos-containing materials.

1.6 ITEMS NOT INCLUDED

A. The following items shown on the Drawings are not included in the Contract:

1. Items indicated "NIC" (Not in Contract).
2. Existing construction, except where such construction is to be removed, replaced, or altered.

1.7 CONFINED SPACE

A. Comply with confined space and permit-required confined space as defined in Title 29, Part 1910, Section 146 of the Code of Federal Regulations (29CFR 1910.146).

B. Comply with Safety Requirements for Confined Spaces (ANSI/ASSE Z117.1-2009).

C. All spaces shall be treated as permit-required confined spaces until the Contractor and/or subcontractors are able to re-classify the space to a non-permit confined space as per 29CFR 1910.146 and ANSI/ASSE Z117.1-2009.

D. Confined spaces are not intended to limit or define Contractor's or subcontractors' regulatory compliance requirements. In addition to confined spaces indicated on the drawings, other confined spaces may be present or created by the work of this contract. Notify the Director's Representative, in writing, of confined spaces created or eliminated during execution of the Work.

E. For the purpose of inspecting ongoing work, furnish at no additional cost to the State, personnel, as directed, to allow the Director's Representative to enter confined space and permit-required confined space in compliance with Title 29, Part 1910, Section 146 of the Code of Federal Regulations (29CFR 1910.146).

1.8 OCCUPANCY

A. This is an occupied Facility, however the building will be vacated during execution of the Work.

1.9 CONTRACTOR USE OF PREMISES

A. Work hours shall be as established by the Facility authorities thru the Director's Representative.

B. Inform the Director's Representative of work area access requirements. The Director's Representative will coordinate and schedule the requirements with Facility staff to obtain and ensure timely availability of work areas.

C. Check in with the Facility Representative, as directed, at the beginning of each workday. Furnish information regarding where employees will be working during the day.

D. Comply with the Facility's Visitor Identification Policy. A copy of the current policy will be distributed at the initial job meeting.

E. The following items are not allowed on the Site or on Facility premises.

1. Firearms, ammunition, weapons, and dangerous instruments (other than tools required for the Work).
2. Alcoholic beverages and persons under the influence of same.
3. Cannabis and persons under the influence of same. Cannabis, as used herein shall refer to any form of cannabis that has psychoactive properties.
4. Illegal controlled substances and persons under the influence of same.
5. Cameras (except with written permission from the Director's Representative).

F. Comply with Facility policies relating to smoking at the Site.

G. Routes of ingress and egress within the building to the location of the Work shall be as directed by the Director's Representative.

H. Store materials and perform the Work so that pedestrian and vehicular traffic is not obstructed.

I. Do not diminish the level of life safety during performance of the Work.

J. Remove furniture and portable equipment which interferes with execution of the Work and store where directed. Reset such items when directed.

K. Utility Outages and Shutdowns: Do not interrupt utility services or branch services within the building except for the time required to make new connections. Arrange with the Director's Representative for the time and duration of interruptions of services. Provide temporary services required to maintain building services at all times other than during scheduled interruptions.

1. Construction Work Contract: During the asbestos abatement portion of the Project, comply with the requirements specified in Section 028213.

L. Be responsible and accountable for employees, suppliers, subcontractors and their employees, with regard to their use of the premises. Direct them to comply with the Facility Regulations and with the security and traffic regulations.

M. Furnish Facility authorities with a telephone number or method to contact the supervisor for the Work in case of an emergency after work hours, including weekends and holidays.

N. Comply with applicable federal and State of New York Right-to-Know Law provisions. Provide Safety Data Sheets (SDS) documents for products that have SDS data prior to use on the project site.

1. Upload and maintain electronic SDS documents on the Submittals Website (SDS tab).
2. SDS tab is organized by prime contracts. To be readily identified, name products with SDS by specification section number and product name.
3. Supply and maintain one hard copy of the appropriate SDS on the project site and one hard copy with the Facility's Right-to-Know Information Officer.

O. Direct employees to be watchful for people in or near the work area where safety hazards may be present. Notify the Facility Safety/Security Department, if necessary, to remove them from the work area or Site.

P. Report fire and other emergency situations to the Facility Safety/Security Department immediately.

1.10 OPENINGS AND CHASES IN NEW CONSTRUCTION

A. Construction Work Contract:

1. Unless specifically indicated otherwise, provide openings, chases, and similar items in new construction provided under this Contract, as required for items to be provided under related contracts.
2. After the installation and completion of the items for which openings and chases have been provided, build in, over, around and finish the openings and chases to complete the Work.
3. Provide all cutting, patching, and refinishing resulting from failure to provide the required openings and chases, if the necessary information was furnished by the related contractor before 24 hours of start of the applicable part of the Work.

4. If related contractors fail to furnish drawings or written information covering the openings and chases they require in new construction at least 24 hours before installation of the Work affected by those items, the related contractors will be required to do all cutting, patching, and refinishing of the construction so affected, at their own expense.

B. HVAC Work, Plumbing Work, and Electrical Work Contracts:

1. Unless specifically indicated otherwise, furnish drawings or written information to the Construction Work Contractor covering the openings and chases required in new construction for the Work. If such information is not furnished at least 24 hours before start of the applicable part of the Construction Work Contractor's work, all necessary cutting, patching, and refinishing will be included in the Contract at no additional cost to the State.

1.11 REFERENCE SPECIFICATIONS AND STANDARDS

A. Comply with the requirements of the various specifications and standards referred to in these Specifications, except where they conflict with the requirements of these Specifications. Such reference specifications and standards shall be the date of latest revision in effect at the time of receiving bids unless the date is given.

B. DOT Specifications: If the abbreviation DOT appears in these Specifications, it shall mean the most current edition of the New York State Department of Transportation, Office of Engineering specifications entitled "STANDARD SPECIFICATIONS - CONSTRUCTION AND MATERIALS", including all applicable Addenda in effect at the time of receipt of bids. The DOT specifications may be purchased from the Department of Transportation, Plan and Publication Sales, 50 Wolf Road, Albany, NY 12232, (518) 457-2124.

1.12 LAYING OUT

A. Examine the Contract Documents thoroughly and promptly report any errors or discrepancies to the Director's Representative before commencing the Work.

B. Lay out the Work in accordance with the Contract Documents.

C. Construction Work Contract:

1. Location of the building on the Site shall be performed by a licensed Land Surveyor or Professional Engineer.
2. Provide and maintain axis lines on each floor.
3. Provide and maintain marks 4 feet above finish floor on each column at each floor.
4. Take elevations and locations from control points located by the Director's Representative.

1.13 SPECIAL INSPECTIONS

A. Special Inspections and tests are required by Chapter 17 of the Building Code of New York State (BCNYS). Inspections & Testing Services will be provided by the state unless otherwise noted.

B. Contractors are responsible for notifying the Directors Representative regarding individual inspections listed in the **STATEMENT OF SPECIAL INSPECTIONS**. Contractors shall cooperate with the inspectors and testing agencies and sufficient notice and lead time (minimum 48 hours) must be allowed for inspection and testing to be performed.

C. Where deficiencies are identified, the contractor must take corrective actions to comply with the contract documents or remedy the deficiencies in accordance with Article 9 of the General Conditions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 011100 - SAFETY

PART 1 - GENERAL

1.1 SUMMARY

A. This section requires compliance with applicable Safety codes, standards, and regulations, including but not limited to OSHA, Building Code of New York State, Fire Code of New York State, and Facility Regulations.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Summary of the Work: Section 011000.

B. Regulatory Requirements: Section 014100.

1.3 DEFINITIONS, ABBREVIATIONS

A. OSHA: Occupational Safety and Health Administration.

B. BCNYS: Building Code of New York State.

C. EBCNYS: Existing Building Code of New York State.

D. FCNYS: Fire Code of New York State.

E. NFPA: National Fire Protection Association.

F. NEC: NFPA 70E.

1.4 SUBMITTALS

A. Provide a SITE SPECIFIC SAFETY PLAN no later than 15 days after approval of the Contract by the Comptroller. The plan must include at a minimum:

1. Cover page including Project Name/Location/Project Number/Contractor Name/Potential Start/Finish Dates.
2. Complete Scope of work.
3. Roles and Responsibilities page identifying Supervision, list of the names of all competent and/or qualified persons, including their qualifications, for each activity requiring a competent person i.e. excavations, scaffolding, rigging, fall protection, etc.
4. A program for implementing appropriate PPE as specified in the High 5. Hazard Assessment detailed in Subparagraph 1.04 A.11 below.
5. A program for assuring employees have proper work attire, i.e. substantial sole safety-toed footwear, long pants, shirts with minimum 4-inch sleeves, etc.

6. A 100% 6-foot conventional fall protection program which provides full body harnesses, lanyards (connectors), and anchorage points, or guardrails for all trades when working 6 feet above a lower level.

    a. Exception:

        1) When the employer can demonstrate that it is infeasible or creates a greater hazard to utilize these systems, the employer shall develop and implement a Fall Protection Plan, which meets the requirements of paragraph (k) 1926.502. This plan must be approved before implementation by the applicable OGS Regional Safety Manager.
        2) When working from portable ladders.

7. A program for raising employee awareness through the use of weekly Safety Talks (i.e. "Toolbox Talks" or "Tailgate Meetings") on topics related to upcoming/relevant work on the project. Contractor shall be required to verify that all employees on site participated in meeting, with documentation submitted to the Director's Representative.
8. Confined Space entry program and procedures for entry, when applicable.
9. A written Respirable Silica Protection Plan, including tasks for which employees could reasonably be expected to be exposed to harmful silica dust, and control methods that will be used to limit or eliminate exposure, as well as any PPE necessary to ensure protection.
10. Identify specific hazards related to this Project, and how employees will be protected from those hazards.
11. High Hazard Assessment's detailing procedures for all high hazard work activities including, but not limited to:

    a. All lifts involving cranes or material handling equipment.
    b. Scaffolding where scaffold working deck is expected to be 10' or higher from a lower level.
    c. Demolition.
    d. Excavations where anticipated depth is 5' or more.
    e. Hot work activities, which shall follow all applicable requirements stated in NFPA 51B.
    f. Steel erection with specific fall protection requirements detailed.
    g. Work at elevations, including roofing work.
    h. Electrical work involving Lock Out - Tag Out (LOTO) procedures.

        1) High Hazard Assessments shall include a step-by-step breakdown of a given task, the hazards associated with each step, the controls that will be utilized to eliminate or minimize the hazards, and the PPE that will be used to protect from remaining hazards.
        2) All required certifications shall be provided for all applicable types of work with required training/certifications (i.e., Powder Actuated Tools, Aerial Lifts, Forklifts, Crane Operators License, etc.).

12. A project safety inspection program, with a minimum of one documented safety inspection per week, during the course of construction. Submit copies of all resultant inspection reports to the Director's Representative on a weekly basis.

13. A program for providing proper care for injured employees, including the name of the employee with First Aid/CPR certification who will be on site at all times during the course of construction, to include local hospital/medical facility locations and contact information.
14. Provide an Emergency Action and Evacuation Plan, including Fire Protection and Emergency Response, when applicable.

    a. Plan to include:

        1) Procedures for reporting a fire or other emergency.
        2) Procedures for emergency evacuation, including type of evacuation and exit route assignments.
        3) Emergency Contact information.
        4) Procedures on how to alert workers of an emergency.
        5) Procedures to account for all employees after evacuation and muster/evacuation points.
        6) A list of all major fire hazards, to include type of fire protection equipment necessary to control hazard.

B. Provide safety orientation training for each employee prior to their starting work on site. This orientation shall include, but not be limited to: Fitness for Duty (drug, alcohol, and cannabis policies), training on general safety hazards, site-specific safety policies and procedures, personal protective equipment, injury reporting and protocols, emergency evacuation and preferred medical providers, and HAZCOM (GHS Harmonization). Provide documentation of all safety orientation training for each new employee on the site, including all subcontractors, to the Director's Representative.

C. Accident Reporting: The Director's Representative shall be immediately notified of any and all accidents. A copy of a written accident report shall be furnished to the Director's Representative within 24 hours of an incident.

    1. After any incident on site resulting in an employee being injured or damage to property, a Post- Accident Review Investigation shall be held as soon as possible after any incident. As a minimum, this investigation will involve the injured person, his/her supervisor, the responsible project superintendent and/ or supervisor and the onsite safety supervisor. The contractor shall be responsible to provide a written Post-Accident Corrective Action Plan, which will detail immediate steps taken to correct any unsafe condition that led to injury/property damage, long-term actions to prevent repeat incidents from happening on the site, and roles and responsibilities of individuals who will be implementing the corrective measures, which will be reviewed for effectiveness and continually monitored for implementation.

1.5 STOP WORK ACTIVITY AUTHORITY

A. All NYS OGS Representatives have the authority to stop a work activity that exposes any Contractor employees to potentially serious injury and/or illness. The responsible Contractor shall immediately cease work, perform an assessment of the activity that is exposing employees to any Immediately Dangerous to Life or Health (IDLH) conditions, and take action necessary to satisfactorily address the unsafe condition(s), at no cost to the State. The activity may only resume when a NYSOGS Representative and respective Contractor's Safety Representative verify

corrective measures have been satisfactorily completed. Any related impact to time of completion shall be considered within the Contractor's control.

B. No site work, other than mobilization, shall commence until the Site-Specific Safety Plan is approved.

1.6 ADDITIONAL SAFETY POLICIES THAT WILL BE ADHERED TO THROUGHOUT THE CONSTRUCTION PHASE

A. All contractors are required to utilize head (hardhat) and eye protection (safety glasses) at all times well within the project limits.

B. Any employee exposed to equipment/vehicles shall be required to utilize an ANSI Level 2 Safety Work Vest.

C. Contractors are strictly prohibited from utilizing any state-owned equipment or materials during construction.

D. All tools/equipment on multi-trade projects shall bear identifiable markings as to which contractor the tool/equipment belongs to. If any tool/equipment on the project does not have contractor's markings, the tool shall be immediately removed from the site until owner claims the tool/equipment.

E. Seatbelts shall be utilized when operating all heavy equipment designed to be operated in a seated position. When traveling in a vehicle, all employees shall be seated in a secured seat with a seatbelt in place.

F. Inspections of scaffolding prior to use, and excavations prior to entry shall be documented by an on-site competent person. Documented inspection will be available on-site for inspection by the Director's Representative.

G. All electrical cords/water hoses, if feasible, shall be run overhead to avoid additional slip/trip hazards. If not feasible due to physical restrictions, cords/hoses shall be placed to avoid all walkways and work areas.

H. All heavy equipment being utilized on site shall have a fire extinguisher of suitable size/rating within reach of operator.

I. Any fuel-powered equipment shall have a fire extinguisher of suitable size/rating no closer than 10 feet and no further than 25 feet from the equipment.

J. All electrical work shall be done when panels/lines/boxes have been de-energized and locked out, unless otherwise approved in writing by the Director's Representative.

K. An applicable sized Spill Kit shall be available on all jobsites where heavy equipment is being utilized.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011100

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Include in the contract sum the allowances stated in this Section.

B. Should the net cost be more than the specified amount of the allowance, the contract sum will be adjusted by Order on Contract in accordance with the General Conditions. No Work in excess of the allowance will be permitted except by Order on Contract. Should the net cost be less than the specified amount of the allowance, the balance will be deducted from the final payment.

1.2 TOTALS FOR ALLOWANCES

A. The sum of allowances required by the Construction Work Contract is $613,246.

B. The sum of allowances required by the HVAC Work Contract is $455,222.

C. The sum of allowances required by the Plumbing Work Contract is $112,919.

D. The sum of allowances required by the Electrical Work Contract is $154,005.

1.3 ALLOWANCES FOR CONTINGENCIES

A. Include in the contract sum the amount indicated below to cover the cost of additional labor and materials for contingent activities within the scope of the Contract as directed in writing by Field Order. The Field Order will include a description of the Work and a method for determining the cost of such Work.

1. Construction Work Contract: $613,246.
2. HVAC Work Contract: $133,818.
3. Plumbing Work Contract: $112,919.
4. Electrical Work Contract: $154,005.

B. The value of the directed Work under this allowance will be determined by one or more of the methods authorized in Section 012200 which will be specified in the Field Order.

1.4 ALLOWANCE FOR DIRECT DIGITAL BUILDING CONTROL SYSTEM

A. HVAC Work Contract: Include in the contract sum the amount of $321,404 to cover the cost of providing modifications TO THE EXISTING Direct Digital Building Control System as specified in Section 230924 and as shown on the H-Contract Drawings.

1. The cost of providing the Work of this allowance will be paid in the amount specified. It is a fixed price allowance. Progress payments will be determined, by the Director, by evaluating the work completed.
2. Include overhead and profit for administering this allowance separately in the contract sum, not in the allowance.
3. Cause the products covered by this allowance to be provided by such persons or firm and for such amount as designated.
4. The amount of the allowance includes furnishing the products in accordance with the requirements of referenced Specification Section. Labor for the installation of the products covered by the referenced Specification Section shall be included in the Contract sum (not in the Allowance).
5. The amount of the Allowance includes delivery to the site and applicable taxes.
6. Include unloading and on-site handling costs, storage, and protection costs, installation costs, and other expenses separately in the Contract sum, not in the Allowance.
7. Purchase and Delivery:

    a. Execute purchase agreement with designated supplier.
    b. Arrange for samples, shop drawings, and product data as required.
    c. Make arrangements for delivery.
    d. Upon delivery, promptly inspect products for damage or defects. Submit claims for transportation damage.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012100

SECTION 012200 - COST COMPUTATIONS

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Contracting Officer shall determine the value of any order on contract or field order by one or more of the following methods:

1. Agreed to Amount:

a. By estimating the fair and reasonable cost of:

1) Labor, including all wages, required wage supplements and insurance/taxes required by law (workers' compensation, social security, disability, unemployment, etc.) paid to or on behalf of working foremen, workers and other employees below the rank of the Contractor's designated representative directly employed at the Site of the Project, and, on contracts with an award price less than $500,000, the Contractor's designated representative, regardless of job title or work status.
2) Materials (to be installed or turned over to the State).
3) Consumables are items that are used during the progression of the extra work that do not become a permanent part of the Work and as such are considered overhead.
4) Equipment, excluding hand tools, which, in the judgment of the State, would have been or will be employed exclusively and directly on the omitted work or extra work.
5) Where the omitted or extra work is performed directly by the Contractor; by adding to the total of such estimated costs a sum equal to 15 percent thereof, but, where the omitted or extra work is performed by a subcontractor, by adding a sum equal to 15 percent of said costs for the benefit of such subcontractor, and by adding, for the benefit of the Contractor (no further allowance will be made where extra work is performed by any sub-subcontractor), an additional sum equal to:

a) 10 percent of the first $10,000 of the above-estimated costs, including the subcontractor's percentage override.
b) Plus 5 percent of the next $90,000 of the total of said items.
c) Plus 3 percent of any sum in excess of $100,000 of the total of said items.
d) For the purposes of the aforesaid percentage overrides, the words "extra work" shall be defined as a complete item of added, modified, or changed work as described in writing to the Contractor and the reductions enumerated shall be applied individually to each Order on contract issued on a Contract. Such "extra work" may include the work of one or more trades and/or subcontractors or sub-subcontractors and shall include all labor, material, plant, equipment, tools and all

incidentals directly and/or indirectly necessary, related, involved in or convenient to the successful completion of the extra work item.

6) By accepting an amount agreed upon by both parties, which amount is to be calculated in a manner similar to that provided in subparagraph 1.01 A. 1. a.
7) Should the Contractor fail to submit the required proposal as required by Article 10.5.1, the Contractor shall be compensated as follows:

a) The costs will be determined by the State as described in 1.01 A. 1. a. above, but the percentages for profit and overhead will be as follows:

(1) Where the omitted or extra work is performed directly by the Contractor; by adding to the total of such estimated costs a sum equal to 10 percent thereof, but, where the omitted or extra work is performed by a subcontractor, by adding a sum equal to 10 percent of said costs for the benefit of such subcontractor, and by adding, for the benefit of the Contractor (no further allowance will be made where extra work is performed by any sub-subcontractor), an additional sum equal to:

(a) 5 percent of the first $10,000 of the above-estimated costs, including the subcontractor's percentage override.
(b) Plus 3 percent of any sum in excess of $10,000 of the total of said items.

2. ACTUAL COSTS - By determining the actual cost of the extra work in the same manner as in the above Subparagraph 1.01 A. 1.a. except that actual costs of the Contractor be utilized in lieu of estimated costs. The State shall have the option to utilize this method provided it notifies the Contractor of its intent to do so prior to the time the Contractor is properly authorized to commence performance of such work.
3. By applying the applicable price or prices set forth in the Contract Documents or by applying a unit price agreed to by both parties.
4. All profit, overhead and expense of whatsoever kind and nature, other than those set forth above in Subparagraphs A.1.a. 1), 2) and 4), and below in Paragraph 1.01 F., of the Contractor, its subcontractors and sub-subcontractors, are covered by the aforesaid percentage overrides and no additional payment therefore will be made by the State.

B. Irrespective of the method used or to be used by the State in determining the value of extra or omitted work, the Contractor shall, after receipt of a request, shall within 15 days submit to the State a detailed breakdown of the Contractor's estimate of the value of the omitted or extra work. The Contractor shall submit evidence, satisfactory to the Contracting Officer, to substantiate each and every item that constitutes their proposal for the change. The State shall promptly respond to such submission.

C. Whenever this Contract requires the determination of labor hours, it shall be determined as follows:

1. Labor Hours shall be based on the labor factors as published in "RSMeans" by Reed Construction Data. The latest versions of the following books shall be used:

a. Building Construction Cost Data
b. Electrical Cost Data
c. Mechanical Cost Data
d. Plumbing Cost Data
e. Site Work and Landscape Cost Data

2. In the event that a labor factor for an item of work is not available from these publications the Director shall establish a labor factor as to the amount of time it takes to perform an item of Work.

a. Conditions that affect the performance of the extra work whether addressed in the Contract Documents or not shall be taken into consideration and negotiated.
b. Unforeseen conditions or conditions that are not identifiable shall not be included in the Contractor's proposal. If while in the process of performing the omitted or extra work a condition or event that affects the work becomes evident, it will be addressed at that time via a field order or change order.

D. Materials:

1. Materials used in performance of the extra work shall conform to Contract Documents and shall be listed by description, quantity, and standard unit of measure.
2. Where the extended value of an item of material is FIVE THOUSAND DOLLARS OR MORE a quote or invoice from a supplier shall be included as part of the Contractor's proposal. The Director's Representative reserves the right to request substantiating pricing documentation to verify actual and reasonableness of any and all submitted costs. This requirement does not impede Subparagraph 1.01 B. above.
3. Travel costs including mileage, tolls, and overnight lodging and meal per diems incurred as a result of the extra work will be reimbursed at costs without any markup for the Contractor or subcontractor as the case may be. Daily travel to the project site must exceed 35 miles, one way, from the Contractor's office address to claim mileage and toll expenses; only mileage beyond 35 miles will be reimbursed. Distance must exceed 50 miles, one way, from Contractor's office address to the project site to claim overnight lodging and meal per diems. Actual cost for overnight lodging and meal per diems will be reimbursed up to the maximum rates listed per locality, as established by U.S. General Services Administration (GSA).
4. Personal Protection equipment required for hazardous materials abatement and materials used to create critical barriers and protection barriers, provided that they are expended during the performance of the extra work or turned over to the State at the request of the Director's Representative, are reimbursable as part of an order on contract.

E. Whenever this Contract requires the determination of the cost of equipment, it shall be determined as follows:

1. Equipment used or to be used in the performance of Work shall be specifically described by the manufacturer, model number and date of manufacture and be of suitable size and capacity required for the work to be performed.
2. Equipment, excluding hand tools which are defined as tools and equipment having a new purchase price of less than ONE THOUSAND DOLLARS, and which will be used exclusively and directly on the Work. For the purposes of computing the Contractor's cost for self-owned equipment, the rate used for periods of under five days shall be the monthly

rate set forth for the item of equipment in the Equipment Watch® "Rental Rate Blue Book" published by Penton Media (800 669-3282) divided by 22 days to establish a daily rate and divided again by eight hours to establish an hourly rate. The rate used for periods of 5 days or more shall be 45% of the published monthly rate. In the event the "Rental Rate Blue Book" does not list the item of equipment used, the applicable rate shall be determined in the same manner as set forth above except that the monthly rate used shall be that set forth in "The AED Green Book" published by Penton Media (800 669-3282). In the event that a rate is not established in the "Rental Rate Blue Book" or "The AED Green Book" for a particular piece of equipment, the Contracting Officer shall establish a rate for ownership costs and operating costs for that piece of equipment that is consistent with its cost and expected life. Self-owned equipment is defined to include equipment rented from controlled or affiliated companies.

3. Rented equipment will be paid for at the actual rental cost. Equipment rented for the Work used in the performance of extra work will be reimbursed for operating costs only.
4. For the purposes of the performance of extra or additional work, when, in the opinion of the Contractor, and as approved in writing by the Director's Representative, suitable equipment is not available on the Site, the moving of said equipment to and from the Site will be paid for at actual cost.
5. Notwithstanding any other provision, if the State should determine that the nature or size of the equipment used by the Contractor in connection with the performance of Work is larger or more elaborate, as the case may be, than the size or nature of the minimum equipment determined by the State to be suitable for the performance of Work, the cost of equipment used in calculating the costs of extra work or delay damages will not be based upon the equipment used by the Contractor but instead will be based on the smallest or least elaborate equipment determined by the State to have been suitable for the performance of the Work. In no event shall the amount paid to the Contractor as the allowance for the use of self-owned construction equipment exceed the lower of the actual cost of such equipment or the depreciated value of such equipment as carried on the Contractor or subcontractors' books.
6. The Contractor shall be reimbursed for its operating costs for self-owned equipment based on actual cost data. Operating costs shall include fuel, lubricants, other operating expendables, and preventive and field maintenance. Operating costs do not include the operator's wages. In the event, after documented and demonstrated due diligence, actual operating costs are not ascertainable, then the Contractor will be compensated utilizing 100 percent of the operating costs set forth in the "Rental Rate Blue Book" and the Contractor shall be reimbursed the product of the number of hours of actual use multiplied by the operating cost per hour.
7. The maximum amount of reimbursement for the ownership costs of self-owned equipment is limited to the original purchase price of the equipment as listed in the "Green Guide for Construction Equipment" published by Penton Media (800) 669-3282. In the specific event when the ownership reimbursement is limited by the original purchase price, the Contractor shall, nevertheless, be reimbursed for the operating cost per hour for each hour of actual use.

F. Insurance and Bonds:

1. The additional cost of all required Bonds and Liability and Builder's Risk Insurance Premium required by this Contract, arising from the additional cost of performing extra work shall be paid by a change order or field order to be issued upon physical completion

of the Work and upon the submission of proof of payment of such additional premiums assessed by the respective insurance companies for such additional cost of the extra work.

2. Should the additional work require an additional insurance policy not initially required or anticipated in the execution of the contract, whether required of the Contractor or a subcontract between the Contractor and a subcontractor actually performing extra work, will be reimbursed based on actual cost.

G. Unless otherwise specifically provided for in an order on contract or field order, the compensation specified therein for extra work includes full payment for both the extra work covered thereby and for any damage or expense caused the Contractor by any delays to other work to be done under the Contract resulting from or on account of said extra work, and the Contractor waives all rights to any other compensation for said extra work, damage or expense.

H. In computing the value of an order on contract or field order which involves additions and deletions of work and the cost of the added work exceeds the cost of the deleted work, overhead and profit shall be computed on the amount by which the actual cost of additional labor and material exceeds the actual cost of the deleted labor and material, except no additional overhead and profit shall be allowed on the value of any order on contract or field order determined by the method provided in Subparagraphs 1.01 A. 1.b. or 1.01 A. 3.

I. In computing the value of an order on contract or field order which involves additions and deletions of work and the cost of the deleted work exceeds the cost of the added work, the Contractor will be allowed to retain the overhead and profit on the amount by which the cost of the deleted work exceeds the cost of the added work, except that no overhead and profit shall be retained on the cost of work determined by the method provided in Subparagraphs 1.01 A. 1.b. or 1.01 A. 3.

J. Subject to the provisions of Article 17A of the General Conditions, the following elements of damage, and only the following elements, as determined by the Contracting Officer, will be recoverable by the Contractor as "delay damages" provided that they are actual, reasonable and necessary:

1. Documented additional or escalated job site labor expenses.
2. Documented additional or escalated costs for materials.
3. Documented additional or escalated equipment costs less appropriate credits, as such are determined in accordance with this Section.
4. Documented costs of extended job-site overhead (including job superintendent, office engineer and clerical staff, but not including working foremen).
5. An additional 15 percent of the total of the above items in Subparagraphs 1.01 J. 1., 2., 3. and 4. for home office overhead and profit thereon.
6. Documented additional or escalated insurance and bond costs.
7. When the work is performed by a subcontractor, the Contractor shall be paid the actual, reasonable and necessary cost of such subcontracted work as outlined Subparagraphs 1.01 J. 1. through 4., including the subcontractor's main office overhead and profit of 15 percent. The Contractor shall also be allowed an additional 5 percent administrative fee for processing.
8. The phrases "additional expenses", "escalated expenses", "additional costs" and "escalated costs" shall include expenses and costs above or below those normally incurred in the performance of the work, less any appropriate credit, and/or attributable, with appropriate

credits, to the performance of work or portions of work in a different time period than that which was indicated on the approved progress schedule.

K. The parties agree that, with regard to delay damages, the State will have no liability for the following items and the Contractor further agrees it shall make no claim for the following items:

1. Profit, in excess of that provided for above.
2. Loss of anticipated or unanticipated profit.
3. Labor inefficiencies and loss of productivity.
4. Home office overhead in excess of that provided for above.
5. Consequential damages, including but not limited to interest on monies in dispute, including interest which is paid on such monies, loss of bonding capacity, bidding opportunities, or interest on retainage or investment, or any resultant insolvency.
6. Indirect costs or expenses of any nature.
7. Direct or indirect costs attributable to performance of work where the Contractor, because of situations or conditions within its control, has not progressed in a manner satisfactory to the Executive Director.
8. Attorneys' fees or claims preparation expenses.

L. Remedies Exclusive: With respect to extra costs and delay damages, the parties agree that the State shall have no liability to the Contractor for expenses, costs, or items of damage other than those which are specifically identified as payable above. In the event any legal action is instituted against the State by the Contractor on account of any extra work or for additional compensation, whether on account of delay, acceleration, breach of contract, or otherwise, the Contractor agrees that the State's liability will be limited to those items which are specifically identified as compensable above. The Contractor further agrees to make no claim for expenses other than those which are specifically identified as compensable above.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012200

SECTION 013000.01 - ADMINISTRATIVE REQUIREMENTS-ECP Version

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Other requirements pertaining to payments are included in the General Conditions and in the various sections of the Specifications.

B. Cost Computations: Section 012200.

C. Submittals: Section 013300.

1.2 WAIVER OF CERTAIN SUBMITTAL REQUIREMENTS

A. The Electronic Contractor Payments (ECP) program facilitates electronic submission of payment applications and related documents and information via a secure web-based portal. This portal is hereinafter referred to as the "Vendor Interface". Hardcopy (paper) submission of the following forms is waived, and the information required by these forms shall be submitted via the Vendor Interface:

1. BDC 169 (Contractor's Application for Payment form).
2. BDC 187 (Detailed Estimate form).
3. BDC 329 (Contractor's List of Subcontractors–Suppliers).

1.3 SCHEDULES AND RECORDS

A. Submit the following information not later than 15 days after approval of the Contract unless the Contractor or the Director determines an earlier submission is required to properly schedule or progress the Work.

1. CONTRACTOR'S LIST OF SUBCONTRACTORS – SUPPLIERS: An affirmative review of the subcontractor's responsibility will be conducted. Any subcontractor disapprovals resulting from negative information derived from the State's review will result in written notice (by letter or e-mail) to the Contractor. A responsibility meeting may result from these actions. The Contractor will defer to the provisions of Article 6, General Conditions, regarding its responsibility to prosecute the work.

a. Submit the CONTRACTOR'S LIST OF SUBCONTRACTORS – SUPPLIERS information using the required electronic entry process via the Vendor Interface.
b. Indicate the items of Work proposed to be accomplished by subcontractors, the name and address of each proposed subcontractor, the dollar value of the subcontract, and Minority and Women-Owned Business Enterprise (MWBE) information.

1) Attach a properly completed and executed NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE – FOR PROFIT CONSTRUCTION (CCA-2) and forward to the Vendor Responsibility Unit for each subcontractor whose subcontract is valued at $100,000.00 or more unless requested otherwise by the Contracting Officer and/or the Director's Representative.
2) As an alternative to submitting a paper version of the form, subcontractors may opt to submit the CCA-2 on-line via the New York State VendRep System. Information on this system and the New York State vendor responsibility requirements is available at: http://www.osc.state.ny.us/vendrep/index.htm.

c. Indicate the names and addresses of proposed suppliers, the dollar value of the supplies, and MWBE information.
d. Failure in providing this information may result in payments being withheld and referral to the Contracting Officer for a responsibility determination.

B. If after initial approval, circumstances require a change in a subcontractor or supplier or require additional subcontractors or suppliers to be used, use the Vendor Interface to submit a revised BDC 329 form that reflects the changes or additions.

1.4 DETAILED ESTIMATE

A. Before making the first requisition for a progress payment, prepare a detailed estimate of quantities and prices for materials, labor and other items required for the Work, which shall aggregate the contract sum.

1. Submit the DETAILED ESTIMATE information using the required electronic entry process via the Vendor Interface.

B. The detailed estimate shall be supported by such evidence, including certified copies of subcontracts, as the Director may require.

C. The detailed estimate must be approved by the Director who may revise it as, in their reasonable judgment, is necessary to make the various items conform to their true values.

1. The value of each requisition for payment shall be based on the approved detailed estimate.

D. The Contractor shall bill any item of work listed as "Lump Sum" to 100%, no partial percentages will be allowed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013000.01

SECTION 013113 - PROJECT PLANNING AND SCHEDULING

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS AND INFORMATION SPECIFIED ELSEWHERE

A. Summary of the Work: Section 011000.

B. Administrative Requirements: Section 013000.

C. Project Meetings: Section 013119.

1.2 SUMMARY

A. Section includes administrative and procedural requirements to plan, schedule, and document the progress of the Project, work in place, and predict and prevent delays to established activities and milestones during performance of the Work.

1.3 DEFINITIONS

A. Activity: A task or grouping of tasks containing an anticipated start-date and corresponding duration in work days, anticipated labor resources, person responsible for the work, restricted work period, contract reference document, sequence of work, and budgeted cost (if required) comprising a generalized portion of the Work, that can be identified and measured for planning, coordinating, monitoring, and controlling the project.

B. Activity Duration: Time needed for the represented work in work days. No duration in any baseline or recovery schedule shall be longer than one (1) reporting period as defined in Section 013119, except for submittal items. All procurement and work activities must be provided in sufficient detail to meet this duration requirement.

C. Baseline Agreement: The agreement document for Section 013113 which will contain the baseline schedule report.

D. Baseline Project Schedule: The schedule derived from the Contractors' Project Work Plan activities and their prescribed durations, predecessor activities, etc., recognizing the completion of the Work of the Project Work Plan in accordance with the Contract duration. The Baseline Project Schedule will remain unaltered as a tool to measure progress outlined and anticipated during the Initial Schedule Meetings and from the agreed-upon Baseline Project Schedule. The Project Team will agree to the resulting schedule by completing the Baseline Agreement within the Project Work Plan software. OGS Scheduling will maintain the agreed-upon Baseline Project Schedule as the assigned project baseline schedule.

E. Calendar: The calendar utilized for each activity, set according to the direction of OGS Scheduling to accurately reflect anticipated State and Federal holidays. Calendars reflecting

additional shifts or non-traditional work hours must be reviewed with the Director's Representative and approved by OGS Scheduling and prior to use in the schedule.

F. Constraints: Constraints are a function which can manipulate or hold specific dates. Constraints are used by OGS Scheduling in specific instances during the baseline process to hold dates dictated by the terms of the Contract or assigned to submittal & procurement items in the Project Work Plan. Constraints are not allowed to be used/entered by Contractors on any activities except for mobilization items.

G. Data Date: The progress point or "status date" for activities/tasks in the project. Project status is up-to-date as of the Data Date. OGS Scheduling will specify the Data Date for each Project Update Reporting Period.

H. Float: The measure of latitude in starting and/or completing an activity without impeding the successful realization of Project Milestones. It is an expiring Project resource that is jointly owned, not for the exclusive use or benefit of either the State or the Contractors. Float is available as needed to meet scheduled milestones and Project completion. Recognizing float within an activity, or chain of activities, does not permit the Contractors to disrupt progress or to delay completion of an activity.

I. Milestone Activity: A significant start or finish to Work on a given set of activities on the Project, defined by both the Director's Representative and the Contractors. The Project Team will identify milestones, activities, or summary activities for incorporation into the Baseline or Project Schedule to assist in planning, scheduling, and coordinating the Project. This may include major milestones or phases required by the Contract Documents to be utilized by the Contractors and Project Team in developing the Baseline Project Schedule.

J. OGS Project Work Plan System (OGS PWPS): The collaborative online system provided by OGS for Contractors to establish their Project Work Plan activities, duration, prerequisites, resources and budgeted cost (if required) for Work of the Project. All work is entered into the OGS PWPS by the Contractor(s).

1. Importing of any information is not allowed.
2. Time lags are not allowed to be scheduled between activities.

K. OGS Scheduling: The department responsible for assisting and training the Project Team, reviewing, reporting, and interpreting the Contractor Project Work Plan and related information.

L. Preliminary Project Schedule: This schedule is a summary outline of the Contractor's anticipated Project Work Plan for the sequence of work of this Contract through Substantial Completion as noted in the Summary of Work (Section 011000). The activities are developed using anticipated dates and are coordinated among the Contractor(s). The resulting Schedule outlines and aligns the sequence of work for the individual Contract and coordinates the Contracts that are part of a multiple trade Project. The Project Work Plan needs to address sequencing of the work, long lead items, and impact of weather and restricted work periods as noted in Section 002219. The Project Team will agree to the resulting schedule by completing the Baseline Agreement within the Project Work Plan software.

M. Project: Work to be performed as part of one or more Contracts.

N. Project Team: The Designated Representatives acting on behalf of the State and/or Contractors to successfully plan, schedule, and coordinate the Work of the Project.

O. Project Update Reporting Period (Project Schedule Updates): A regular reporting period as stipulated for this Project in Section 013119, that is concluded by a Project Update Meeting for review, evaluation, and adjustments to the Project Work Plan and Activity progress.

P. Project Work Plan: A comprehensive list of Contractor tasks, including prerequisite activities, durations, labor resources, budgeted costs (if required), etc. used to develop the Project Schedule as entered by the Contractor's Supervision staff in the OGS PWPS.

Q. Recovery Project Schedule: Revised Project Work Plan developed from recovery options presented by the Contractor to the Director's Representative when Project Update Reporting indicates the Work is 15 or more work days behind the current Substantial Completion dates of the agreed-to Baseline Project Schedule. The Contractor will update their Project Work Plan accordingly for the revision. The Project Team will agree to the resulting recovery project schedule by completing the Baseline Agreement within the Project Work Plan software. OGS Scheduling will maintain the Baseline Agreement Recovery Project Schedule as the assigned Baseline Project Schedule.

1. The Recovery Project Schedule will only be reviewed by OGS when it is entered in the OGS PWPS

R. Resource: Any labor (workers), material, or equipment, shared or exclusive, required for the completion of the Work or an Activity, for which an associated cost is recognized.

S. Schedule: A comprehensive plan of necessary procedural tasks, including task sequencing, projected start and finish dates, and resource allocation required to successfully complete the Work by the Project completion date. The dates in the Schedule are the result of the sequence, duration, and requirements from the Project Work Plan.

PART 2 - PRODUCTS

2.1 SCHEDULE SOFTWARE

A. The Project Work Plan software (Oracle Primavera) is provided by OGS through the OGS PWPS for use on this OGS contract only.

B. Contractors are required to have Internet access to utilize the OGS PWPS for all parts of this section.

C. Meetings will be held in accordance with Section 013119 and will be conducted via WebEx™ or an equivalent online method provided by OGS.

D. OGS will provide training for access and use of the OGS PWPS. Additional support is available by OGS Scheduling as requested.

PART 3 - EXECUTION

3.1 PROJECT AWARD

A. OGS Scheduling will establish one account for each Contractor.

B. The Initial Schedule and Training Meeting is coordinated by the Director's Representative and Project Team. Prior to the meeting all Contractor accounts need to be set up by OGS Scheduling.

3.2 INITIAL SCHEDULE MEETING – (PERIOD DEFINED BY SECTION 013119)

A. The meeting is mandatory for the members of the Project Team and will be conducted by OGS Scheduling for the purpose of defining the intent of the specification and reporting structure of the Project. The mutual agreements reached at this and subsequent meetings form the basis for the Baseline and other Project Schedule(s), and will be used for coordinating, scheduling, and monitoring the Work of all related contracts.

B. This meeting also includes training for the Project Team using the OGS PWPS. Each session will be one hour (total of two hours) via WebEx™ or an equivalent online method provided by OGS.

1. SESSION 1 - Preliminary Project Schedule & Initial Training
2. SESSION 2 - Baseline Project Schedule Training

3.3 PRELIMINARY PROJECT SCHEDULE – (PERIOD DEFINED BY SECTION 011000, if specified)

A. In the OGS PWPS, the Contractor will develop their Project Work Plan activities and provide information relating to activity naming, anticipated work dates, resources, and budgeted cost (if required) on the OGS PWPS. The Project Team will establish a focused work breakdown structure (WBS). The activities are developed using anticipated dates and are coordinated among the Contractor(s).

B. Activities are to be appropriately placed within the OGS PWPS. Activity durations are only limited by the requirements of coordinating the work of the Preliminary Project Schedule by the Project Team. For the purposes of coordinating this schedule, relationships (predecessors and successors) are not required between the activities.

C. The Preliminary Project Schedule must be agreed to by the Project Team. Each Contractor and the Director's Representative shall agree to it by completing the Baseline Agreement within the Project Work Plan Software (sample agreement included at the end of Section 013113) .

3.4 BASELINE PROJECT SCHEDULE – (45 DAYS AFTER AWARD)

A. The Contractor(s) shall develop and enter their Project Work Plan activities which adequately represent their scope of Work of the Contract and the required coordination efforts for the Project. This includes, but is not limited to, sequence requirements, identification of logical connections to other work critical to Substantial Completion, accounting for critical submittals or submissions,

the fabrication and delivery of long-lead materials, products, specialized equipment or services, and the recognition of critical testing, inspection, or commissioning durations for coordination and tracking.

B. Each activity will identify the Contractor's anticipated duration for the activity defined in workdays, resources, and budgeted cost (if required) of the activity. The Contractor is responsible to provide the mandatory requirements outlined by OGS and the online OGS PWPS layout within the project structure provided by OGS. Revisions to the project structure must be agreed upon by the Project Team.

C. Activity durations cannot exceed the time frame in work days of the Project Reporting Period as defined in Section 013119.

D. The Contractors will identify each activity with a unique Activity Name that clearly communicates the scope of the work item to the rest of the Project Team. No Activity Name or Activity ID will be altered without approval of the Director's Representative and OGS Scheduling after the Baseline Project Schedule has been agreed to by the Director's Representative.

E. The Baseline Project Schedule must be agreed to by the Project Team. Each Contractor and the Director's Representative shall agree to it by completing the Baseline Agreement within the Project Work Plan software (sample agreement included at the end of Section 013113).

3.5 PROJECT SCHEDULE UPDATES (PERIOD DEFINED BY SECTION 013119)

A. Project Schedule meetings will be led by the Director's Representative and held to review Contractor updates to the actual starts, actual finishes, and remaining duration of in-progress activities, and consider logic changes, predecessor alterations, duration amendments, time impact events, and scope changes, for the purpose of determining the status of construction progress for the updated Project Schedule. At each meeting the Project Team will:

1. Agree to the completed Activity dates.
2. Coordinate and agree to the next 6-week Project Work Plan.
3. Evaluate and acknowledge any impact to the Contractor's ability to execute the Project Schedule according to the Baseline Project Schedule.

B. During the progress of Work on the Project, the Contractors are required to document actual start, actual finish, and remaining duration on a daily basis. Information will be posted by the Contractor to the OGS PWPS as defined during the Initial Schedule Meeting.

C. Contractors are required to update the status of all their activities two (2) days prior to the Project Schedule Meeting. The Contractors will notify the Director's Representative and OGS Scheduling when their update information for all activities is complete.

1. Any variation of 5 days (+/-) in the start or finish date for each activity must be explained and posted to each activity.
2. All necessary initiated documents such as Request for Information (RFI), Information Bulletins (IB), Field Orders (FO), Change Orders (CO), and Notice of Claim (NOC) must be incorporated by the Contractor into the Contractor's Work Plan.

3. Any Contractor failing to progress their Work as outlined in the updated Project Work Plan will be informed of their deficiencies and, if required, be requested to provide a recovery option.

D. Performing Work out of sequence with the Project Schedule is not permitted unless written approval is obtained from the Director's Representative prior to commencement.

3.6 RECOVERY PROJECT SCHEDULE

A. When the Project Schedule completion date is projected to be greater than the agreed-to Baseline Project Schedule's Substantial Completion date by 15 or more work days, the Contractor(s) will revise the existing Project Work Plan as necessary towards meeting the specified completion date within 10 calendar days after the Project Schedule update meeting.

B. Contractor recovery options may include, but are not limited to, allocating additional resources to reduce activity duration or modify activity sequencing.

C. Alterations to the Project Work Plan activities for a Recovery Work Plan will require the approval of the Contractor(s) and the Director's Representative. Agreed-to alterations to the Project Work Plan activities for a Recovery Work Plan will constitute the updated Project Schedule.

D. The updated Project Schedule must be agreed to by the Project Team. Each Contractor and the Director's Representative shall agree to it by completing the Baseline Agreement within the Project Work Plan Software (sample agreement included at the end of Section 013113).

E. The previous Baseline Project Schedule will be retained. The new agreed-upon Baseline Project Schedule will be used to measure progress moving forward.

3.7 SCHEDULE CLOSEOUT (AS-BUILT SCHEDULE)

A. A schedule meeting must occur to update the project schedule with the actual progress dates and to confirm that all activities are complete for Substantial Completion.

B. The Director's Representative will determine if any of the original Substantial Completion activities need to be tracked for Physical Completion in the project schedule.

3.8 TIME IMPACT AND TIME IMPACT ANALYSIS (TIA)

A. The Contractor(s) will represent the impact relative to the assigned Baseline Project Schedule in the OGS PWPS. The Contractor will incorporate the impact of any change in their Work Plan per the current OGS PWPS requirements for impacts. The requirements include but are not limited to:

1. A day-for-day tracking of the impact to illustrate the sequence of the impact from the initiating event.
2. All information required to create an Activity and the associated codes for the impact in the OGS PWPS as defined previously.

3. Modification of existing activities so that the name of each associated task enhances the reader's understanding of the impact. Modification of the associated (TIA) codes for the change in the OGS PWPS.
4. For the addition of any new activities, an explanation of how the modified scope impacts the agreed-to Baseline Project Schedule.

B. Contractors and the Project Team will use the most current Project Work Plan update to prepare the Time Impact representation.

C. If Project Work Plans have not been updated in accordance with this specification, an update by the Contractor must be generated which includes an accurate realization of the Work performed and progressed up to the Time Impact event. Failure to maintain Project Work Plan updates in accordance with this or related specifications will not absolve the Contractors of the responsibility to identify Time Impact as defined by, but not limited to, Specification Section 013113 or the General Conditions.

D. OGS Scheduling will assist the Contractor with this process as requested.

E. A Request for Time Extension will require Time Impact recognition within the OGS PWPS and Schedule.

F. Time Impact events will be reviewed for accuracy and are to be updated in accordance with relevant new information regarding time for resolution and impact to the remaining work on the Project.

G. All impacts (sequence, duration, and scope) must be agreed to by the Project Team.

3.9 SUBSTANTIAL COMPLETION DATE CHANGES

A. If the Substantial Completion date of the project is modified by an Order on Contract in accordance with the General Conditions, the Project Team will agree to a new Baseline Project Schedule within 10 calendar days after the approval of the Order on Contract.

1. The previous Baseline Project Schedule will be retained. The new agreed-upon Baseline Project Schedule will be used to measure progress moving forward.
2. The new Baseline Agreement must be agreed to by the Project Team. Each Contractor and the Director's Representative shall agree to it by completing the Baseline Agreement within the Project Work Plan Software (sample agreement included at the end of Section 013113).

SAMPLE BASELINE AGREEMENT

Baseline Agreement

NEW YORK STATE OF OPPORTUNITY. | Office of General Services Design & Construction

Project:

It is agreed that the referenced Project Schedule defined by the following reports has been reviewed and is accepted for use in coordinating, scheduling, and monitoring the work of all related contracts

By acknowledging within the Project Work Plan software, OGS does not waive the terms and conditions set forth in the Contract Documents. In accordance with the General Conditions (Document 007213) any change in the Contract sum or time of completion requires an Order on Contract.

Refer to the following report for the specific dates.

Contract	Representative	Activity Name	Date

END OF SECTION 013113

SECTION 013119 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 INITIAL JOB MEETING

A. The Director's Representative will notify all parties concerned of the time and place of the initial job meeting. The meeting will be conducted by the Director's Representative. The agenda will be based on the Format for Initial Job Meeting. All items on the format, as they apply, will be discussed.

1. A copy of the Facility's current Visitor Identification Policy will be distributed.

1.2 PROJECT SCHEDULE MEETINGS

A. The Initial Schedule Meeting will be held within 15 days of Project award. The Director's Representative will notify all members of the Project Team of the time and place of the meeting. The meeting will be conducted by the Director's Representative and OGS Scheduling via WebEx™ or an equivalent online method for the following purposes:

1. Define the intent of the specification.
2. Review the reporting structure of the Project.
3. Provide training to the Project Team.

B. The Director's Representative will notify all members of the Project Team of any Schedule development/coordination meetings conducted by the Director's Representative and OGS Scheduling via WebEx™ or an equivalent online method.

C. The Project will have monthly project update reporting periods. The update meetings will be conducted by the Director's Representative and OGS Scheduling via WebEx™ or an equivalent online method for the following purposes:

1. Agree to the completed Activity dates.
2. Coordinate and approve the next 6-week Project Work Plan.
3. Evaluate and acknowledge any impact to the Contractor's ability to execute the Project Schedule according to the approved Baseline Project Schedule.

1.3 BI WEEKLY JOB MEETINGS

A. Unless otherwise directed, job meetings will be held bi weekly, at a time and place agreed upon by the Director's Representative, the Contractor, and the Facility Representative. Other interested parties may attend when needed, e.g., subcontractors and representatives from suppliers, public utilities, and local government. The meetings will be conducted by the Director's Representative for the following purposes:

1. Review job progress, quality of Work, and approval and delivery of materials.

2. Identify and resolve problems which impede planned progress.
3. Coordinate the efforts of all concerned so that the project progresses on schedule to on-time completion.
4. Maintain sound working relationships between the Contractors and the Director's Representative, and a mutual understanding of the project requirements.
5. Maintain sound working procedures.

1.4 PRE-INSTALLATION MEETINGS

A. Pre-installation meetings will be held to review the specifications, Project Schedule, drawings, and approved submittals in preparation for start of a particular activity.

B. The meetings shall be attended by the Director's Representative, a Design Representative, and the Contractor's Representative, including installer and representatives of manufacturers & fabricators involved in or affected by the installation and its coordination with other materials/trades.

C. The Director's Representative shall schedule the meetings prior to the start of the work. The goal of these meetings is to ensure the quality of construction and to maintain the schedule.

1.5 ATTENDANCE

A. A Contractor's Representative shall be required to attend all meetings scheduled by the Director's Representative, as set forth above.

B. If the Contractor's Representative fails to attend two scheduled meetings without prior approval, the Contractor will be directed to replace the current Contractor's Representative. Further incidents of non-attendance by the Contractor's Representative will form the basis for review of the Contractor's responsible vendor status.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013119

SECTION 013300.0 - SUBMITTALS

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Other requirements pertaining to submittals are included in the General Conditions and in the various sections of the Specifications.

B. Summary of the Work: Section 011000.01.

C. Administrative Requirements: Section 013000.

D. Contract Closeout Submittals: Section 017716.

1.2 DEFINITIONS

A. Deviation: Changes in products, materials, equipment and methods of construction from those required by the Contract Documents and proposed by the Contractor.

B. Acceptable Manufacturer, Company or Product: A manufacturer, company or product capable of achieving the requirements established in the Contract Documents and demonstrating compliance.

C. Portable Document Format (PDF): An open standard file format used for representing documents in a device-independent and display resolution-independent fixed layout document format.

D. Environmental Product Declaration (EPD): a third-party verified (also known as “type III”) product declarations that quantify environmental information the full life cycle of a product, from raw material supply, transport, manufacturing, installation, and operational use, through to waste processing and disposal at end-of-life, per ISO 14025.

1.3 DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS

A. Deviations from the requirements of the Contract Documents will not be allowed unless a request for deviation is made in writing prior to or at the time of submission and the specific deviation is approved by the Director’s Representative subject to the requirements of Article 4 of the General Conditions. The request for deviation shall be made utilizing the CONTRACT DOCUMENT DEVIATION REQUEST FORM (Form BDC 49) accessible from the OGS Web Site.

1. The submission of a deviation shall be done in a timely manner according to the schedule of submittals to allow the Director sufficient time for review.

1.4 "OR EQUAL" TO BRAND NAME PRODUCTS

A. Whenever a product is specified by brand name, a comparable brand, equal to that named, may be submitted for approval subject to the requirements of Article 5 of the General Conditions.

1. The Contractor shall bear the burden of proving that the proposed product is equal to the specified product. The submission of an "or equal" shall be done in a timely manner to allow the Director sufficient time to review the proposed product.
2. Whenever a color or pattern is indicated by a specific manufacturer's name or number, the intent is to communicate the required color or pattern of the material. Other manufacturers' comparable colors or patterns may be submitted for approval as equal.

1.5 WAIVER OF CERTAIN SUBMITTAL REQUIREMENTS

A. Unless otherwise specified, the requirement to submit product data and samples for approval will be waived for products specified by brand name if the specifically named products are furnished for the Work. In such cases, submit required Product Data to the Director's Representative via Submittal Exchange® for information only.

1.6 ADMINISTRATIVE REQUIREMENTS

A. Participate in the OGS's hosted web-based collaboration service (Submittal Exchange® at www.submittalexchange.com) to transmit and track Contractor provided project related documents.

B. Identify submittals by project title and number. Include Contractor's name, date, and revision date. On shop drawings, product data and samples, also include the name of the supplier and subcontractor (if any), and applicable specification section number. Stamp each submittal and initial or sign the stamp to certify review and approval of submittal.

C. Assemble submittals in accordance with the requirements in the individual sections of the Specifications and as required by this section. It is the Contractor's responsibility to review and verify that all information required for each submittal is included in the submittal package. Errors or omissions found by the Contractor are to be corrected prior to the submission of the submittal package for approval. Incomplete submittal packages that have been submitted for review and approval will be returned.

1. It is the Contractor's responsibility to verify that portions of the submittal package to be provided by a subcontractor (or supplier) are complete, as well as portions of the submittal package being provided directly by the Contractor.
2. Do not combine the submittals of more than one specification section with submittals required by other specification sections unless specifically stated in the contract Specifications.

D. If a submittal is based on, or the result of, a change order or field order to the Contract Documents, include copies of the applicable change order or field order with the submittal.

E. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each specification section concurrently unless instructions for partial submittals are required in a specific specification section requiring sequential submissions.
3. Submit action submittals and informational submittals required by the same specification section as separate packages under separate transmittals.
4. Coordinate transmittals of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. The Director's Representative reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

F. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on uploading the submittal to Submittal Exchange®. No extension of the project schedule will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow time for the initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. The Designer of Record will advise the Director's Representative when a submittal being processed must be delayed for coordination.
2. Resubmittal Review: Allow time for review of each resubmittal.
3. Sequential Review: Where sequential review of submittals by the project team is necessary for coordination, allow time for review.

G. The Construction Contractor shall employ or otherwise provide a full-time Submittal Coordinator for no less than 90 days after the Initial Job Meeting (IJM). The Submittal Coordinator is responsible to manage, coordinate and facilitate the submittal process on behalf of the Contractor. The Submittal Coordinator shall have regularly been engaged in construction administration for a minimum of 3 years and shall not be employed or otherwise engaged as the Project Manager or Superintendent for either the Work of this Contract or be employed in any role, full or part time, outside of this Contract.

1.7 SUBMITTALS

A. Submittal Coordinator Qualifications: Not later than 10 days after Award. Include resume and references, and other certification, licenses, or other requested information.

B. Schedule of Submittals acknowledgement: Provide written acknowledgement that the Schedule of Submittals has been received and reviewed with Critical Submittals identified and Contractor's Projected Dates (three dates inserted into each column) are entered for each specification item.

1.8 RE-EVALUATION FEE

A. In accordance with Article 4.7 of the General Conditions, a re-evaluation processing fee will be levied against the Contractor for each re-evaluation of a Submittal or Submittal Package

submission that was returned for failure to comply with the submittal requirements relative to completeness, content or format.

1.9 ELECTRONIC SUBMITTALS

A. Submittal Exchange® is used to provide an on-line database and repository which shall be used to transmit and track project related documents. The intent for using this service is to expedite the construction process by reducing paperwork, improving information flow, and decreasing submittal review turnaround time.

1. Project submittals (shop drawing, product data and quality assurance submittals) shall be transmitted by the Contractor in PDF to Submittal Exchange®, where it will be tracked and stored for retrieval for review. After the submittal is reviewed it is uploaded back to Submittal Exchange® for action or use by the Contractor and Director's Representatives.
2. The service also tracks and stores documents related to the project such as RFI's (Request for Information), IB's (Information Bulletins), CAD Coordination, Minutes, Testing, Closeout, and SWPPP documents.

B. For each submittal, the Contractor shall review and apply electronic stamp certifying that the submittal complies with the requirements of the Contract Documents, including verification of manufacturer/product, dimensions and coordination of information with other parts of the work.

C. It is the Contractor's responsibility to provide submittals in PDF. The Contractor may use the following options:

1. Subcontractors and suppliers provide electronic submittals in PDF to the Contractor through Submittal Exchange®.
2. Subcontractors and suppliers provide paper submittals to the Contractor, who electronically scans and converts them to PDF.
3. Contract a Scanning Service, which will allow the Contractor and the Contractor's subcontractors and suppliers to provide paper submittals to the Scanning Service, which electronically scans and converts them to PDF. It will be the Contractor's responsibility to transmit the scanned submittals to Submittal Exchange®.

D. Image Quality:

1. Image resolution: The PDF files shall be created at a minimum resolution of 200 dots per inch utilizing the original document size. The Contractor will be responsible to increase the resolution of the scanned file or images being submitted as required to adequately present the information.
2. Image Color Rendition: When information represented requires color to convey the intent and compliance, provide full color PDF reproduction.

E. Internet Service and Equipment Requirements:

1. The Contractor will be required to have an Email address and Internet access at Contractor's main office.
2. Unless the Contractor will exclusively be using a Scanning Service to create PDF documents, the Contractor will be required to own a PDF reviewing, creating and editing software, such as Adobe Acrobat (www.adobe.com), Bluebeam PDF Revu®

(www.bluebeam.com), or other similar PDF reviewing, creating and editing software for applying electronic stamps and comments.

F. Training and Support:

1. Submittal web-based collaboration training and support shall be available, free of charge from Submittal Exchange®, for project participants using the submittals website.
2. Training schedule will be coordinated through the Director's Representative.

G. Paper prints (hardcopies) of reviewed submittals:

1. Record Copy: Each Contractor shall provide one paper copy of each submittal they are responsible for to the Director's Representative within 14 days of receipt of a released submittal (i.e. marked "Approved", "Approved As Noted", or other implied acceptance of a submittal), or meeting the requirements of Waiver Of Certain Submittal Requirements Article of this specification section.

   a. Exception: Paper copies are not required for a submittal that is disapproved or requiring resubmission.
   b. Paper copies shall be printed in a size format equal to the original document.
   c. Scaled Shop Drawings shall be printed to the scale noted on the drawings.
   d. The resolution of the printed copy shall be equal to that of the PDF file that it is being printed from.
   e. The Record Copy shall be used by the Director's Representative during the construction of the project and shall be retained as a turn-over item to the facility at the end of the project as required under Section 017716 Contract Closeout.

2. Use for Construction: Retain complete copies of submittals on project site. The Contractor shall not commence work for related activities until the appropriate submittals are approved and the corresponding record copies are delivered to the Director's Representative.
3. Distribution: The Contractor will furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Maintain transmittal forms indicating distribution of submittals.

1.10 SHOP DRAWINGS

A. Provide shop drawings in the format required by the Specifications. Show the information, dimensions, connections and other details necessary to insure that the shop drawings accurately interpret the Contract Documents. Show adjoining construction in such detail as required indicating proper connections. Where adjoining connected construction requires shop drawings or product data, submit such information for approval at the same time so that connections can be accurately checked.

B. Electronic copies of CAD Drawings of the Contract Drawings will not be provided by the Director's Representative for Contractor's use in preparing submittals.

C. Have shop drawings prepared by a qualified detailer. Shop drawings shall be neatly drawn and clearly legible. Machine duplicated copies of Contract Drawings will not be accepted as shop drawings.

1. Where shop drawings are indicated to be drawn to scale:

    a. Use scale normally found on an “Architect” or “Engineer” scale.
    b. Written Scale: Clearly label scales being used on each drawing and/or on each detail on the drawing.

        1) Examples: 1/8” = 1’-0” 1” = 40’-0”.

    c. Graphic Scale: Adjacent to each Written Scale, provide a graphic scale delineating the scale being used. Graphic scale shall be divided into measuring units relating to the accuracy required for the drawing or details.
    d. Clearly dimension key elements of the drawing or detail.

2. When the drawing sheet is printed full size, the minimum text size shall be 1/8" (3.2 mm) for hand drafting and 3/32" (2.5 mm) for CADD drawings.

D. Submit the shop drawings through Submittal Exchange®. The shop drawings will be reviewed and the review results will be posted on Submittal Exchange®. Contractor will receive email notice of completed review. If the review results in disposition of “DISAPPROVED” or “RETURNED FOR CORRECTION”, promptly correct the deficiencies and resubmit the shop drawings meeting Contract requirements.

1.11 PRODUCT DATA

A. Provide product data in the format required by the Specifications. Modify product data by deleting information that is not applicable to the project or by marking the product data to identify pertinent products. Supplement standard information, if necessary, to provide additional information applicable to project.

B. Submit the product data through Submittal Exchange®. The product data will be reviewed and the review results will be posted on Submittal Exchange®. Contractor will receive email notice of completed review. If the review results in disposition of “DISAPPROVED” or “RETURNED FOR CORRECTION”, promptly correct the deficiencies and resubmit the product data meeting Contract requirements.

C. Comply with applicable federal and State of New York Right-to-Know Law provisions. Provide Safety Data Sheets (SDS) documents for products that have SDS data prior to use on the project site.

1. Upload and maintain electronic SDS documents on the Submittal Exchange® SDS tab.
2. SDS tab is organized by prime contracts. To be readily identified, name products with SDS by specification section number and product name.
3. Supply and maintain one hard copy of the appropriate SDS on the project site and one hard copy with the Facility’s Right-to-Know Information Officer.

1.12 ENVIRONMENTAL PRODUCT DECLARATION (EPD)

A. Provide EPDs for the specific material required by the Specifications, if available.

B. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 Environmental labels and declarations, ISO 14044 Environmental management – Life cycle assessment, and ISO 21930 Core rules for environmental product declarations of construction products and services.

C. Include completed Environmental Product Declaration (EPD) Cover Form found on the OGS Web Site with the submission of each EPD.

D. Submit the product data through Submittal Exchange®. The EPD will be reviewed, and the review results will be posted on Submittal Exchange®. Contractor will receive email notice of completed review. If the review results in disposition of "DISAPPROVED" or "RETURNED FOR CORRECTION", promptly correct the deficiencies and resubmit the product data meeting Contract requirements.

1.13 QUALITY ASSURANCE

A. Provide quality assurance information in the format required by the Specifications, including supporting documentation as required.

B. Submit the quality assurance information through Submittal Exchange®. The quality assurance information will be reviewed and the review results will be posted on Submittal Exchange®. Contractor will receive email notice of completed review. If the review results in disposition of "DISAPPROVED" or "RETURNED FOR CORRECTION", promptly correct the deficiencies and resubmit the quality assurance information meeting Contract requirements.

1.14 SAMPLES

A. Submit 2 (unless a different number is specified) of each sample required by the Specifications.

B. Samples will become the property of the State when submitted and will not be incorporated in the Work unless specifically stated otherwise.

C. The electronic submittal process is not intended for color samples, color charts, or physical material samples.

D. Record transmittal of each sample required by the Specifications through Submittal Exchange®.

E. Consult with the Director's Representative for direction on where Samples will be sent for review.

F. The sample will be reviewed and the review results will be posted on Submittal Exchange®. Contractor will receive email notice of completed review.

1.15 REVIEW OF SUBMITTALS

A. Items submitted for review will be reviewed for compliance with the Contract Documents, based upon the information submitted. The items will be acted upon with the following dispositions:

1. Approved:

a. Where the submittal is marked “Approved”, the work covered by the submittal may proceed provided it complies with the Contract Documents. Final acceptance will depend on that compliance.

2. Approved as Noted:

a. Where the submittal is marked “Approved as Noted”, the work covered by the submittal may proceed provided it complies with the review comments noted on the submittal and the Contract Documents. Final acceptance will depend on that compliance.

3. Disapproved:

a. Where the submittal is marked “Disapproved”, do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery or other activity for the item submitted. Prepare a new submittal according to the review comments noted on the submittal and meeting the Contract Documents.

4. Returned for Correction:

a. Where the submittal is marked “Returned for Correction”, do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery or other activity for the item submitted. Revise or prepare a new submittal according to the review comments noted on the submittal and meeting the Contract Documents.

5. Acknowledged:

a. Where the submittal is marked “Acknowledged”, receipt of the submittal is acknowledged and has been recorded.

6. No Action:

a. Where the submittal is marked “No Action” or “No Action Taken”, no review was made of this item, see comments noted on submittal and take appropriate action.

7. Multi-Action:

a. Where the submittal is marked “Multi-Action”, separate dispositions were made for the items submitted, see the review comments for the disposition of each item submitted.

1.16 SCHEDULES AND RECORDS

A. Submit the following Schedules and Records information not later than 15 days after approval of the Contract unless the Contractor or the Director determines an earlier submission is required to properly schedule or progress the Work.

1. SCHEDULE OF SUBMITTALS (S.O.S.):

a. Follow the Instructions to the Contractor in the S.O.S (cover page of the Microsoft Excel form supplied by the State).
b. Confirm submittal items listed and indicate in the spaces following each item, the date the item will be submitted (Projected Transmittal Date).
c. Confirm critical submittals and long lead items identified by the Architect / Engineer. Identify and mark with "X" additional submittals deemed as critical or having long lead times. In addition to the date each item will be submitted, include the date approval is required (allow at least 3 weeks), and the date delivery of the material or equipment is necessary for timely completion of the Work in accordance with the Project Schedule.
d. Notify the Director's Representative of modifications and/or additional submittals necessary for the project prior to requesting revisions with Submittal Exchange®.

2. SUBMITTALS WEBSITE LOG:

a. The submittal website log will be populated by Submittal Exchange® by means of the S.O.S.
b. Review the log and verify that all long lead items and critical submittals are properly indicated according to the latest version of the S.O.S. For each item to be submitted indicate the following:

1) In the "Date Expected" column insert the date the item will be submitted for review and approval (this is the same date as the S.O.S "Projected Transmittal Date").
2) In the "Date Requested on Site" column insert the date the item will be delivered to the project site (this is the same date as the S.O.S "Projected Delivery Date").

c. The submission date that is entered shall provide sufficient time for the item to be reviewed, ordered, delivered and installed for timely completion of the Work in accordance with the Project Schedule. The date entered for submittal of each item is the last day a deviation will be considered.

1.17 TRANSMITTALS

A. Submittal Transmittal (Form BDC 42) accessible from the OGS Web Site:

1. Furnish separate Form BDC 42 for each submitted item sent to Submittal Exchange® for review.

a. Contractor may utilize their own Transmittal Form (or Transmittal Letter) in lieu of utilizing the Form BDC 42, contingent on the Contractor's Transmittal Form includes all information and certifications required by Form BDC 42.

2. Clearly identify applicable specification section number of submitted item (product data, shop drawing, etc.) on the Form BDC 42.

B. All Contracts:

1. Transmit items designated in the Schedule of Submittals (and project Specifications) to the Submittal Exchange®.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300.0

SECTION 013350 - COMPUTER AIDED DESIGN COORDINATION DRAWINGS

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS AND INFORMATION SPECIFIED ELSEWHERE

A. Project Meetings: Section 013119.

B. Submittals: Section 013300.

C. Coordination of Trades: Work of different trades that interfere between mechanical, plumbing electrical, architectural, and structural work shall be avoided by the contractor, within the limits of the practical amount of space required for operation and service of equipment. Keep pipe, duct, conduit, and the like as close to ceiling slabs, walls, columns, etc. to assure maximum benefit of the minimal space allowed. Locate piping, ductwork, and equipment so they do not interfere with the intended use of the operational equipment, and architectural elements. Organize piping, conduit and ductwork in all areas neatly, in an organized arrangement in accordance with approved coordination drawing submittals, in straight, plumb layouts utilizing best quality workmanship for appearance, function and serviceability.

1.2 COORDINATION DRAWINGS

A. The Director's Representative will establish a CAD Administrator (CA) to administer and monitor progress of Coordination Drawings, coordinate and schedule review meetings and protocol for all contractors and distribute information as outlined in this section.

B. The "Base" architectural and structural background drawings will be provided as Computer Aided Design (CAD) files in Autodesk's AutoCAD 2004 or 2007 file format by the CA. The CA will meet with the contractors to determine which version of AutoCAD and which file format they will be using to produce drawings for this project. These "Base" background documents are to be provided to each Contractor in the coordination process to establish a common platform for each Contractor to use for their design drawings. This same information will be used to communicate their respective coordination with the other Contractors.

C. Each Contractor and all of their subcontractors shall prepare as part of its costs, shop drawings in compatible format which will be used for incorporation into the coordination drawings.

D. Work shall start on the coordination drawings within seven (7) days after the initial job meeting. The initial coordination drawing(s) shall be produced by the "C" Contractor starting with the "Base" CAD background drawing supplied by the Director's Representative. These backgrounds shall be updated and modified with integration and revision of CAD drawings for new construction to indicate conditions for approved final layouts for foundations, steel framing, concrete reinforcing, and access flooring approved rough-in layout plans. All building structural elements, walls, doors, windows, louvers, openings, ceiling layouts, access floor layouts and major equipment provided by the C contractor and other significant elements shall be shown on designated layers. Scheduled heights for finished ceilings above finished floor, and height above

finished floor of underside of concrete and metal decks and all beams and joists including provision for fireproofing and finished enclosures shall be indicated at all areas.

1. The "C" Contractor shall provide full size "CAD" files for each level, to be plotted at 3/8" or approved coordination scale as directed by the CA.

    a. All larger coordination drawings, broken up with match lines to correlate with phases and distinct plan areas with drawing designations, shall be supplied by the "C" Contractor and approved by the CA.
    b. All coordination drawings will have the location of plan view information the same. The CA shall establish a point of origin for each drawing and these X and Y positions will not be altered by any Contractor.

2. Each Contractor in the "CAD" Coordination process shall utilize prefixes as established by the CA. Examples of some of those prefixes to be used are as follows:

    a. "B" - Architectural Backgrounds.
    b. "SM" - HVAC Ductwork.
    c. "HV" - HVAC, Piping, Controls, etc.
    d. "PL" – Plumbing.
    e. "EL" – Electrical.
    f. "FP" - Fire Protection.
    g. "ST" – Structural.
    h. "RC" – Reflected Ceilings.
    i. "AF" – Access Flooring.

3. All fonts utilized shall be as found in the agreed upon version of AutoCAD software. If not as specified, the *.shx or *.ttf file shall be provided by the respective Contractor and approved by the Director's Representative. All text height shall be a minimum of 3/32" when plotted in scaled plans.

    a. Compatible hardware and software for completion of designated coordination drawings and communication to the CA is to be included into the bid price.
    b. It shall be the responsibility of each contractor to translate drawings submitted by sub-contractors that were created in alternate CAD programs to the correct format before submission to the CA.

4. Transferring of coordination information drawings from Contractor to Contractor will be by the use of the OGS Project FTP site. Instructions for access to the site will be provided after award of contracts.
5. The final "BASE" Architectural Background drawings will be provided to each Contractor in the coordination process on the FTP site by the "C" contractor. The coordination drawings on disks, including one original vellum and nine prints, shall be forwarded to the CA for approval at each stage in the process by the contractor making the latest modifications.
6. A cross-reference list of drawings shall be provided by each Contractor correlating the drawings list with the "CAD" file name.
7. All altered, changed and/or revised coordination drawings, after resolution of conflicts by the Contractors, shall be submitted via the FTP site.
8. Coordination drawings shall be prepared for the following areas:

a. All areas (above ceiling).
b. Below raised access floors, slab penetrations and inserts.

9. Separate coordination plans shall be prepared for the following areas:

a. Mechanical rooms.
b. Electronics rooms.
c. Electrical rooms.
d. Communications rooms.
e. Radio room.
f. UPS.

E. The sequence of drawings being passed on from one Contractor to another, and the responsibility of each shall be as follows:

1. The initial base Architectural Background drawing, including architectural elements as noted above, shall be placed on the FTP site for each Contractor to access. The CA shall be responsible for periodically updating the base drawings with approved architectural revisions. Each Contractor shall be responsible for submitting drawing files to the FTP site, in the same manner outlined and in the format outlined in this Section. It is the responsibility of each Contractor to check the FTP daily for updates to the drawing files.
2. Within 10 days from date of issue of the Architectural Background by the CA, the "C" Contractor will submit proposed plan layouts and drawing designations. The "C" Contractor will promptly update the backgrounds with detailed layout information based on verification of conditions and dimensions including but not limited to column and beam locations and clear height from finished floors to underside of structure indicating all permanent obstructions. The base drawings provided by the Director's Representative are drawings that were prepared for use in the printing of bid documents. While generally accurate, there is no guarantee of perfect dimensional accuracy of these initial CAD files. It is the responsibility of the "C" Contractor to verify conditions that may vary and to assure the accuracy of drawings showing new construction. The background drawings shall be further updated by the "C" contractor with detailed layout information based on approved shop drawing submittals for steel framing, decking and reinforcing, ceilings and access flooring. Within 60 days from award of contract the "C" Contractor will complete the final Architectural Backgrounds with information outlined above and post on the FTP site, and will notify the CA, the Director's Representative, and all other contractors. Shop drawing submittals must be expedited for all necessary components to complete this work in a timely manner. The "C" contractor will plot the final background drawings and submit 5 sets of prints for approval to the CA.
3. Within 21 days of date of issue of final background drawings by the "C" contractor, the "H" contractor will post updated drawings to the FTP site indicating accurate layouts for all his/her work including equipment size and locations, HVAC piping and ductwork indicating all sizes and height above finished floors, grilles, registers, diffusers, dampers, valves, equipment connections and all major components based on approved submittals, and will notify the CA, the Director's Representative, and all other contractors. Shop drawing submittals must be expedited for all necessary components to complete this work in a timely manner. HVAC ductwork shop drawing submittals and approvals must precede the application of this information to the coordination drawings and the addition of piping and other work. The "H" contractor will plot the updated background drawings and submit 5 sets of prints for approval to the CA.

4. Within 15 days from date of approval of updated backgrounds by the "H" contractor, the "P" contractor will post updated drawings to the FTP site indicating accurate layouts for all plumbing systems indicating sizes and height above finished floor at regular intervals, fixture locations and fire protection systems, and will notify the CA, the Director's Representative, and all other contractors.
5. Within 15 days from date of issue of updated backgrounds by the "P" contractor, the "E" contractor will post updated drawings to the FTP site indicating accurate layouts for all electrical equipment, conduit runs, all lighting fixtures and electrical devices indicating mounting locations and height above finished floor, and will notify the CA, the Director's Representative, and all other contractors.
6. Contractors may submit completed drawings to the FTP Site prior to the total duration established for each contractor. The CA will schedule the sequence for early submissions.

F. Computer Software/Hardware

1. Contractors shall produce their drawings using the agreed upon version of AutoCAD. Contractors may request to use other CAD software, but only with the understanding that they must submit drawings that follow the requirements outlined in this Section.
2. Contractors shall be equipped with a 56 Kbps or greater modem for file transfer with the FTP site, using Microsoft's Internet Explorer version 6.0 (service pack 2) or later for file transfer. Contractors shall be experienced in the use of that modem software before commencement of the drawing process outlined above.

G. Computer Drawings/Files

1. Each Contractor shall be assigned a "Contractor Code" that shall be used throughout the computer drawings in computer file names and drawing layer names. Those prefixes for example are assigned as follows:

CONTRACTOR	SUBCONTRACTOR CODE
C	ST - Structural
E	EL - Electrical
C	EV - Elevator
E	FA - Fire Alarm
P	FP - Fire Protection
H	HV - HVAC
P	PL - Plumbing
C	RC - Reflected Ceiling
H	SM - Sheet Metal
C	AF - Access Flooring

2. Each base drawing file shall be renumbered with each revision with the addition of the Contractor Code. The original drawing file names shall be issued by the "C" Contractor with the release of each approved final background drawing.
3. Each Contractor shall place their work on drawing layers starting with the two letter designations. A layer list will be issued at the initial coordination meeting.
4. Each Contractor shall be assigned a color for their layers to easily distinguish their work from the other Contractors. Contractors shall not deviate from that color without specific instructions.

5. Text size shall be a minimum of 8" in a 1/8" drawing. All text shall be on a separate layer. See attached layer list for each Contractors text layer. All text and callouts shall be located on drawing as not to interfere with other existing data. Contractors shall not deviate from the fonts assigned unless approved by the CA. If non-standard AUTOCAD fonts are used, Contractor shall supply fonts with drawing files.
6. All dimensions shall be placed on their own layer. See attached layer list for each Contractors dimension layer. Each Contractor shall have their own dimension style defined in the DIMS command as SM-DIMS, HV-DIMS, PL-DIMS etc.
7. Any and all blocks used in the drawings shall be created on layer 0 unless otherwise directed. Blocks can then be inserted on Contractor's layer.
8. All questions to be addressed by the Director's Representative shall be placed on the Contractors Questions layer.
9. All beam and slab penetrations shall be shown on the drawings on separate layers with special designations and unique colors to be determined.
10. When a revision is made to a drawing that has been previously issued, or when a specific question or problem area needs attention by others, it shall be clouded and referenced by the Contractor with a revision number. The revision number symbols shall be issued by the CA. The clouds shall be constructed with the cloud command list routine issued by the CA. Clouds and revision numbers shall be placed wherever an addition, deletion, or a change is made, or where an unresolved question remains. The Contractor shall be responsible for checking with the CA for the Revision number to be placed on any particular drawing, and the layer on which that revision number shall be placed.

H. Once the CA receives each final background drawing from the "C" Contractor, the "C", "H", "P", and "E" Contractors shall meet at a minimum weekly meetings to be held to review the status of the coordination process, and drawings which the foremen and/or Superintendent of each Contractor will be required to attend. Each Contractor will be required to bring at least one color plot of all areas to be coordinated of the most current version on the FTP site at that week's meeting. Each affected Contractor shall review, sign and date each updated coordinated drawing which will indicate their agreement that the coordination drawing(s) has (have) been fully coordinated and are void of all conflicts at each stage. Final completed coordination drawings (after submission by the "E" Contractor) shall be signed off by each Contractor, the Director's Representative, and the CA. Any work in place not in conformance with final approved coordination drawings will be required to be removed and relocated unless specific written approval has been obtained by the Director's Representative to proceed with certain specific work in advance of final approval.

I. Any conflicts, etc., discovered in the coordination stages prior to Contractor(s) sign-off which cannot be resolved by the Contractor(s) shall be brought to the attention of the Director's Representative for immediate resolution by the Director at no additional costs to the State. Contractors shall allow for a minimum of one coordination meeting per week.

J. Any conflicts, etc., discovered after coordination sign-off and during the installation of the Work will be the responsibility of the Contractor(s) to resolve with the approval of the Director. Additional costs, if any, for these resolutions shall be solely the responsibility of the Contractor(s).

K. It is the responsibility of the "C" Contractor to verify the accuracy of the final background drawings, and of each subsequent Contractor to verify the completeness and accuracy of the updated information of their own work and to confirm the absence of conflict with other work.

L. A coordination drawing schedule will be developed by the CA for tracking and reporting the status of coordination drawings with the overall project schedule to which all Contractors shall be responsible.

M. Work fabricated/installed prior to the completion of this process is performed at the Contractors own risk, and compensation of time/costs for corrections will not be allowed.

N. During the project these drawings shall be kept up do date by each prime contractor to reflect any and all changes due to field changes, change orders and field orders and shall be used as a basis of the required "As-Built" drawings. At the completion of the contract the construction contractor shall gather the latest information and turn over 5 paper sets and two CDs of the final updated Coordination drawings which is in addition to the specified trade "as-built" drawings for each prime contract

O. Each Contractor shall be responsible for timely updates to the coordination drawings to indicate as-built conditions for their own work. Updates are required to include all changes regardless of the source or reason for the change, including changes initiated by the Director or the Director's Representative. These "as-built" coordination drawing documents (diskettes, mylars, and prints) shall be turned over by each Contractor with certification as to their accuracy, to the Director's Representative upon substantial completion of the project.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013350

SECTION 014100.01 - REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 COMPLIANCE

A. Comply with applicable regulatory requirements and various codes referenced in these specifications. Where conflicts exist between local, State, and/or Federal regulatory requirements, codes, or these specifications, advise the Director's Representative. The Director's Representative will assist in resolving the conflicts to the satisfaction of the regulatory agencies prior to commencing the Work.

1.2 UNIFORM CODE, ENERGY CODE, AND CONTRACTOR QUALIFICATIONS

A. All Work shall comply with OSHA (including site-specific safety plans required on all projects), and the New York State Uniform Fire Prevention and Building Code (the "Uniform Code"), which includes the publications incorporated by reference in Title 19 NYCRR Part 1219 through 1228:

1. 2020 Building Code of New York State (the "Building Code")
2. 2020 Mechanical Code of New York State (the "Mechanical Code")
3. 2020 Fire Code of New York State (the "Fire Code")
4. 2020 Property Maintenance Code of New York State (the "Property Maintenance Code")
5. 2020 Existing Building Code of New York State (the "Existing Building Code")
6. All other standards referenced in 19 NYCRR Parts 1219 through 1228.

B. The contractor shall be aware of, and comply with, contractor requirements identified in the above-referenced codes and standards; for example, but not limited to:

1. OSHA (Occupational Safety and Health Administration).
2. 2020 Building Code Chapter 33 Safeguards During Construction.
3. 2020 Existing Building Code Chapter 15 Construction Safeguards.
4. 2020 Fire Code Chapter 33 Fire Safety During Construction and Demolition.
5. 2020 Fire Code Chapter 35 Welding and Other Hot Work (which governs safety during construction).

C. All Work shall comply with the 2020 Energy Conservation Construction Code of New York State ("Energy Code") promulgated pursuant to Article 11 of the New York State Energy Law. The Energy Code is contained in 19 NYCRR, Part 1240, and in the publications incorporated by reference in 19 NYCRR Part 1240. The publications incorporated by reference in 19 NYCRR Part 1240 include:

1. The publication entitled "2020 Energy Conservation Construction Code" published by International Code Council, Inc.
2. The publication entitled "ANSI / ASHRAE / IES Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings" published by American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc.

3. The other referenced standards mentioned and/or referred to in 19 NYCRR Part 1240.

D. Electrical Work: Conform to the requirements of the National Electrical Code (NEC), as referenced in the Uniform Code, unless otherwise shown or specified. The Director will be the sole judge of the interpretation of these rules and requirements.

E. Elevator Work; conform to:

1. Safety Code for Elevators and Escalators, ASME A17.1, as referenced in the Uniform Code.

1.3 STATE-REQUIRED PERMITS AND INSPECTIONS

A. No Work shall commence without a Construction Permit issued by the OGS Division of Codes and Construction Permitting. Contractors shall not file for and not pay for Construction Permits for Work located on New York State property.

B. New York Board of Fire Underwriters inspection or certificate is not required.

1.4 LISTINGS

A. Equipment and materials for which Underwriters' Laboratories, Inc. (UL) provides product listing service, shall be listed and bear the listing mark.

1. Alternately, any product listed and bearing the mark from one of the other Nationally Recognized Testing Laboratories (NRTL – as recognized by OSHA) shall be an acceptable alternative to being UL listed and marked if the listed product has been tested to the applicable standard.

1.5 FIRE-RESISTANT CONSTRUCTION MATERIALS AND ASSEMBLIES

A. Conform to the fire rating classifications based upon the test methods and acceptance criteria in the "Standard for Fire Tests of Building Construction and Materials" for which Underwriters' Laboratories, Inc. (UL) provides listings.

1. Materials and assemblies shall comply with the acceptance criteria, detailed description of the assembly, its performance in the fire test, and other pertinent details such as specification of materials, Classification coverage, and alternate assembly details.
2. Alternatively, fire resistance rating classifications by other issuing organizations listed in the New York State Uniform Fire Prevention and Building Code are acceptable.

1.6 UTILITIES

A. Underground Utilities:

1. Locate existing underground utilities prior to commencing excavation work. Conform to all requirements of NYCRR 16 Part 753, including the following:

a. Notify UDig NYat least 48 hours in advance, not counting the date of contact.

1) Statewide Phone Number: 811.
2) Website: https://udigny.org/

b. Refer to Project Manual Section 023313 “Underground Utility Locator Service” to locate all utilities on facility and/or private property.
c. Determine exact utility locations by hand-excavated test pits. Contractor will be responsible for the proper support and protection of all utilities to remain in service.
d. Contractor shall provide a representative to clearly mark areas of excavation in accordance with NYS Code Rule 753.
e. Submit copies of all UDig NY Tickets to the Director’s Representative prior to commencement of any excavations.

B. Coordination with Electric Utility Company:

1. Comply with the utility company requirements for the incoming electric service. There are no utility company charges associated with the installation of the incoming service. The utility company is ConEdison.

1.7 FIRE ALARM AND SECURITY WORK

A. The Work to install, modify, repair, or service Fire Alarm Systems and/or Security Systems shall be performed in accordance with the requirements of Article 6-D (Business of Installing Security or Fire Alarm System) of the New York State General Business Law.

1. Fire Alarm Work: New York State Fire Alarm License is required for installation.

1.8 MATERIALS WITH TRACE AMOUNTS OF ASBESTOS

A. Perform Work required to remove, disturb, or repair any material that contains less than 1 percent by weight of asbestos (trace) in accordance with all applicable OSHA regulations (29 CFR Part 1926.1101).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014100.01

SECTION 014216 - DEFINITIONS

PART 1 - GENERAL

1.1 DEFINITIONS SPECIFIED ELSEWHERE

A. Other definitions are included in Article 2 of the General Conditions and in various sections of the Specifications.

1.2 DEFINITIONS

A. The following terms shall have the meanings ascribed to them in this Section, wherever they appear in the Contract Documents.

1. Air Handling Unit: Equipment in which air is heated, cooled, humidified, dehumidified, filtered, deodorized, sterilized, etc., and is moved by mechanical means either within the equipment or externally through ductwork.
2. Cold Water Inlet: That part of distribution piping beginning with a connection to the service piping, and which contains the main shut-off valve, strainer, pressure regulators, gages and appurtenances required for control of the distribution water system for the building. The cold water inlet is part of the distribution system.
3. Company Field Advisor: An employee of the Company which lists and markets the primary components of the system under their name who is certified in writing by the Company to be technically qualified in design, installation, and servicing of the required products or an employee of an organization certified by the foregoing Company to be technically qualified in design, installation and servicing of the required products. Personnel involved solely in sales do not qualify.
4. Drains: Piping connections and valves used for purpose of (a) determining operating conditions of water columns, gage glasses, piping to feedwater heater and other regulators, and (b) piping connections and valves used for removal of contents or sludge and other forms of deposits from tanks, heaters, regulator bodies, and low points in piping systems.
5. Drainage System: Piping and appurtenances required to convey sewage, storm water, and liquid waste from plumbing fixtures, equipment and drains to a point of discharge outside the building.
6. Ductwork, Concealed: Ductwork built into construction and not accessible without removal of construction Work such as masonry, plaster or other finishing material, and ductwork installed in floors, furred spaces, suspended ceilings and behind removable panels.
7. Ductwork Exposed: Ductwork directly accessible by normal accesses without the removal of any construction Work or material.
8. Headroom: Minimum clearance between the floor and the underside of the point of lowest installed mechanical construction above. In case of stairways and walkways, the minimum clearance between the step or surface of the walkway and lowest installed mechanical construction above the stairway or the walkway.
9. Location, Dry: Location not normally subject to dampness or wetness.
10. Location, Damp: Location subject to moderate degree of moisture, including:

a. Partially protected locations under canopies, marquees, roofed open porches, and like locations.
b. Installations in exterior walls.
c. Interior locations such as unheated basements, unheated barns, and cold-storage areas.

11. Location, Wet: Location subject to saturation with water or other liquids, including:

a. Installations underground.
b. Locations exposed to the weather and unprotected.
c. Installations in concrete slabs on grade (with or without vapor barrier between slab and grade).
d. Installations under concrete slabs on grade.
e. Installations in concrete or masonry walls in contact with the earth (with or without membrane waterproofing between wall and earth).
f. Vehicle washing areas and like locations.

12. Mechanical: General term applicable to HVAC, Plumbing, Sprinkler, Laboratory Equipment, Food Service Equipment, Laundry Equipment, and Refrigeration.
13. Piping: This term includes pipe, tube and appurtenant fittings, flanges, valves, traps, hangers and supports.
14. Piping, Concealed: Piping built into construction and not accessible without removal of construction Work such as masonry, plaster or other finishing material and piping installed in floors, furred spaces, suspended ceilings, non-walk-in tunnels, conduits, behind removable panels and cabinet doors.
15. Piping, Exposed: Piping directly accessible by normal accesses without the removal of construction Work or material.
16. Piping, Distribution: Domestic water supply piping, starting with a connection to service piping, and continuing throughout the building to point of connection to equipment and fixture supply piping.
17. Piping, Service: Underground domestic water supply piping starting with a connection to a water main or supply as noted and continuing to and into a building and terminating with the first exposed fitting inside the building.
18. Piping, Tunnel: Piping installed in walk-in or non-walk-in tunnels or conduits up to first shut-off valve inside of a building.
19. Space, Finished: A space which has a finishing material applied to walls or ceilings such as paint, plaster, ceramic tile, enamel glazing, face brick, vinyl wall covering, etc. to provide a finished appearance or which will have such finishes applied under a related Contract.
20. Space, Unfinished: A space which does not meet the definition of a finished space.
21. Steam, High Pressure (HPS): Steam at pressure higher than 125 psig.
22. Steam, Medium Pressure (MPS): Steam at pressure higher than 15 psig, and not more than 125 psig.
23. Steam, Low Pressure (LPS): Steam at a pressure of 15 psig and below.
24. Water, Chilled: Water cooled by refrigeration.
25. Water, Cold: Water with a temperature between 33 degrees F. and 80 degrees F. and which is neither cooled nor heated mechanically.
26. Water, Domestic: Water for use in buildings, except water used in connection with space heating and space cooling.
27. Water, High Temperature: Water with a supply water temperature above 350 degrees F.

28. Water, Hot: Water with a temperature above 80 degrees F.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014216

SECTION 014339 - MOCKUP REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. 265119 “LED Interior Lighting”.

1.2 SUBMITTALS

A. Quality Control Submittals

1. Mockup Plan: Copy of proposed plan.

1.3 DEFINITIONS

A. Mockups (General): Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances.

1. Mockups are not Samples.
2. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

B. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.

1.4 QUALITY ASSURANCE

A. Mockup Plan: Detailed, dimensioned plans and elevations showing mockup size, and items and materials that will be included in proposed mockup.

B. Pre-Construction Conference: Prior to the construction of the mockup, a conference will be called by the Director’s Representative at the Site for the purpose of reviewing the requirements, and intent of mockup. The conference shall be attended by the Director’s Representative, Contractor, and person supervising this phase of the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 INSTALLATION

A. Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish as directed.

1. Build mockups in location and of size and profile indicated or as directed by the Director's Representative.
2. Notify the Director's Representative a minimum of 7 days in advance of dates and times when mockups will be constructed and able to be inspected.
3. Employ supervisory personnel to oversee mockup construction. Employ same workers that will be employed during the construction of Project.
4. Demonstrate the proposed range of aesthetic effects and workmanship.
5. Commence the Work after mockup has been inspected and approved in writing by Director's Representative.
6. The mockup will establish the standard of quality of workmanship by which the Work will be judged.
7. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work. Failure to maintain the mockup, until directed, will be cause for rejection of the Work.

B. Mockup Types: Construct mockup in accordance with approved shop drawings, project manual, and Contract Drawings, using exact materials and methods approved for the Project, including required accessories.

1. Room Mockups: Construct mockups incorporating required materials and assemblies, finished according to requirements. Provide required lighting and additional lighting where required to enable the Director's Representative to evaluate quality of the Work.

END OF SECTION 014339

SECTION 015000.02 - CONSTRUCTION FACILITIES & TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide the construction facilities and temporary controls necessary for the Work, unless otherwise indicated.

1. The construction facilities and temporary controls specified to be provided by a particular Contract shall be kept operational by that Contractor for the Work of all related Contracts at all times Work is being performed by a Contractor.
2. The construction facilities and temporary controls specified to be provided by a particular Contractor shall be installed as soon after award of the Contract as necessary to enable the Work of each Contract to proceed on schedule and maintained until completion of the Work of all related contracts unless otherwise directed in writing.
3. Any Contractor who requires additions to the construction facilities and temporary controls specified to be provided by another Contractor, shall provide and maintain them.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Disposal of Asbestos-Containing Materials: Section 028213.

1.3 TEMPORARY LIGHT AND POWER

A. Electrical energy for temporary light and power is available and will be made available without charge.

B. Extent of Temporary Wiring: Contractors may ascertain the extent of the temporary wiring provided under the Electrical Work Contract by examining the Electrical Drawings.

C. Electrical Work Contract:

1. During any shutdowns and during upgrades to the building electrical service, provide portable source of electricity for temporary light and power of adequate capacity to supply the needs of all contractors for the performance of their Work until the temporary electrical service can be utilized for temporary light and power.
2. Provide wiring and other equipment within the building for temporary light and power.

a. Wiring for temporary light and single phase power shall, in general, consist of 4 wire, 120/208 volt feeders, with branch circuits of #12 conductors minimum.

1) Install branch circuits with suitable fluorescent fixtures or incandescent lampholders for temporary lighting as required to maintain a minimum of 10 foot candles in the work areas. Equip fixtures and lampholders with guards.

Fixtures and lampholders installed in damp or wet locations shall be of the weatherproof type.

2) Install branch circuits with fused grounding type receptacle outlets for single phase power (for power tools, etc.).
3) Install 2 circuits with fluorescent fixtures or incandescent lampholders in corridors and stairs. Space fixtures or lampholders no more than 30 feet apart in corridors. Install fixture or lampholder at each stair landing. Also install one fixture or lampholder in each boiler room and mechanical equipment room (connect to the corridor and stair lighting circuits).
4) Keep the corridor and stair lighting maintained and energized 24 hours per day, 7 days per week.

a. Install wiring for 3 phase power for machines and other heavy electrical loads consisting of 3 phase, 3 wire, 600 volt feeder with fused disconnect switches as indicated. A maximum motor load will be coordinated with the Electrical Contractor on each feeder.

1) Provide a fused sealed service entrance switch for corridor and stair lighting circuits. Locate switch adjacent to and connect to line side of temporary light and power service entrance switch. Stencil cover "CORRIDOR AND STAIR LIGHTING".
2) Provide lamps and fuses including replacements required.

D. All Contracts:

1. Any Contractor requiring additional lighting shall provide additional fluorescent fixtures or incandescent lampholders (with lamps), but in no case shall the load on any branch circuit or feeder exceed its rated capacity.
2. Install materials for temporary light and power in conformance with the National Electrical Code.
3. Materials for temporary light and power need not be new if they are in satisfactory operating condition.
4. Provide ground-fault protection for personnel (such as portable plug-in type ground-fault circuit-interrupters) on single phase 15 and 20 ampere receptacle outlets which are in use.
5. Receptacle outlets, portable cord connectors and attachment plugs shall have standard NEMA configurations.
6. As the progress of the Work allows, and as approved, completed portions of the permanent wiring and electrical service may be utilized for temporary light and power.

1.4 TEMPORARY WATER

A. Water will be made available for the Work without charge at source or sources directed within the limits of the existing supply and usage.

B. Plumbing Work Contract:

1. Make arrangements and pay for water for temporary service.

2. Provide and maintain a temporary water system, of such size and capacity as to adequately supply the needs of all contractors during performance of their Work.
3. The permanent water lines may be used for temporary water service if potable water is carried in the lines.
4. Protect temporary lines against freezing.
5. Repair damages caused by installation of leaky, defective or broken piping, connections or other fittings.

C. All Contracts: Prevent waste of water.

1.5 TEMPORARY TOILETS

A. Construction Work Contract: Provide toilet facilities for Contractor's and subcontractors employees engaged on the Project, including employees of other contractors. Locate toilets where directed and maintain them in a sanitary condition.

NUMBER OF EMPLOYEES	MINIMUM NUMBER OF FACILITIES
20 or less	1 toilet
20 or more	1 toilet and 1 urinal per 40 employees
200 or more	1 toilet and 1 urinal per 50 employees

*Toilet/Urinal Combinations shall count as only one facility.

1. Where water and sewer connections are available, provide water closets, otherwise provide approved chemical or electric toilets.
2. Inside buildings, locate toilet facilities no more than 4 stories or 60 feet above or below, nor more than 500 feet travel on the same level from the work location of any person.
3. Locate toilet facilities no more than 1000 feet from any work location.

    a. Exception: Mobile crews having readily available transportation to nearby toilet facilities.

1.6 PROTECTION AND MAINTENANCE OF HVAC SYSTEM

A. HVAC Work Contract: Maintain the existing HVAC system as to adequately supply the needs of all contractors during performance of their Work and as approved to accomplish the following:

1. Protect materials and equipment being installed as part of the Contract from freezing.
2. Allow for a comfortable environment to enable workers to accomplish their respective tasks in a satisfactory manner.
3. Maintain construction schedules.

B. When, in the opinion of the Director's Representative, the construction is substantially complete, the Director's Representative will arrange for operation of the heating system in accordance with the provisions of Article 20 of the General Conditions concerning State occupation and operation. At such time, Contractor will be relieved of responsibility for temporary heat.

1. Clean and with the Director's Representative present, test existing HVAC system before arranging for State operation.

1.7 PROTECTION OF WORK AND EXISTING PROPERTY

A. Protect installed Work and existing property during performance of the Work.

B. Maintain the building in a watertight condition during performance of the Work.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at wall projections, jambs, sills, and soffit of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, and movement of heavy objects by covering them with durable sheet materials.

F. Protect smoke detectors from airborne dust and debris.

1. At the beginning of each work day, provide protective coverings over smoke detectors in areas where airborne dust and debris will be generated by the Work.
2. At the end of the work day, clean the areas in which the smoke detectors are located by whatever means necessary to assure that airborne dust and debris will not contaminate the smoke detectors, then remove protective coverings.
3. Provide signs, instructions, and alternate methods for reporting a fire during the periods that the smoke detectors are covered.
4. Notify the Director's Representative and have procedures approved.

G. Prohibit traffic or storage upon waterproofed and roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

H. Protect existing trees and plants during performance of the Work unless otherwise indicated. Box trees and plants within the grading limit lines. Do not deposit excavated materials or store building materials around trees or plants. Do not attach guy wires to trees.

I. Prohibit traffic from landscaped areas.

J. Cleaning tools of cementitious and other insoluble materials:

1. Do not wash tools in sinks or other sanitary drainage systems. Protect all drainage systems from debris that can clog or damage piping and fixtures.
2. Take all precautions necessary to prevent cementitious and other insoluble materials from flowing into floor drains.
3. Dispose of excess cementitious and other insoluble debris with the other rubbish.

1.8 BARRIERS AND ENCLOSURES

A. All Contracts: Provide barriers during performance of the Work to:

1. Prevent unauthorized entry to work areas.
2. Allow for State's occupancy of Site.
3. Protect existing facilities and adjacent properties from damage.

4. Protect vehicular and pedestrian traffic.

B. Construction Work Contract:

1. Temporary Partitions: Provide temporary partitions to form fire resistive barriers between work areas and areas occupied by State personnel. Construct the partitions of 3-5/8 inch width steel framing or 2 x 4 wood framing, with 5/8 inch thick Type X (ASTM C 36) gypsum board on both sides of partition. Secure the partitions in place without damaging existing construction. Seal joints on the State occupied side with joint tape and compound. Provide 1-3/4 inch thick solid core flush wood doors or 18 gage flush steel doors, and steel door frames. Equip doors with full mortise hinges and lockset. Furnish the Director's Representative with 2 keys for each lock.
2. Temporary Dust Barriers: Provide temporary dust barriers to prevent the spread of dust from the work areas. Construct the dust barriers of wood framing sheathed with 6 mil polyethylene film. Secure the dust barriers in place without damaging existing construction.
3. Scaffolding, Hoist, and Equipment Barriers: Provide temporary fence enclosures as required to prevent unauthorized persons from coming in contact with ground supported scaffolding, hoists, and equipment.

1.9 SECURITY

A. Key Deposits: A $25 deposit will be required for each key issued by the Facility. Deposits will be refunded upon return of the keys.

B. Facility Key Regulations:

1. Sign Facility keys out and in on a daily basis unless otherwise directed.
2. Keep keys on person at all times while on the premises. Do not loan or give keys to other persons.
3. Do not remove keys from the premises without written permission from the Director's Representative.
4. Report lost, missing, or stolen keys immediately to the Facility Safety/Security Department. Assume responsibility for cost of necessary key and lock replacement as a result of lost, missing, or stolen keys.

C. Identification Cards: Photo ID badges will be provided by the Contractor for all contractor employees. Badges will be held at the facility security desk and issued to authorized workers by the facility on a daily basis.

1. All Contractors, associated sub-contractor employees, and vendors shall provide all information required for background checks to meet installation access requirements to be accomplished by NYS DMNA/NYNG installation Security Office. Contractor workforce must comply with all personal identity verification requirements as directed by NYS DMNA/NYNG installation Security Office.
2. All contractor employees, including subcontractor employees and vendors who are not in possession of the appropriate security clearance, will be escorted in areas where they may be exposed to classified and/or sensitive materials.

3. In addition to the changes otherwise authorized by the changes clause of this contract, should the Force Protection condition (FPCON) at any individual facility or installation change, the Government may require changes in contactor security matters or process.

D. Promptly relock doors and security screens located in access routes, storage areas, and work areas after use.

E. Restore, by the end of each workday, existing in place safety/security items such as doors, screens, alarm systems components, that required removal, replacement, or adjustment to perform the Work, unless otherwise authorized in writing by the Director's Representative.

F. Remove all tools and materials from occupied work areas when the work areas are not attended by employees and at the end of each work day. Store tools in a locked tool box, cabinet, or shed. Store materials where directed.

G. Access and general protection/security policy and procedures:

1. Contractors, and all associated subcontractors and vendors (contractor workforce) shall provide a verified list of all scheduled and on-site employees to the facility/site force protection/security representative, daily.

1.10 WATER CONTROLS

A. Provide and maintain pumping equipment necessary to keep the work areas free from water. Discharge water into existing storm drainage systems or otherwise disperse as directed.

1.11 FIRE PREVENTION

A. Take precautions necessary to prevent fires.

B. Fuel for cutting and heating torches shall be acetylene or LP-gas only and shall be contained in Underwriters Laboratory or Federal Department of Transportation approved containers.

C. Furnish and maintain a currently inspected 20 pound capacity multi-class A:B:C fire extinguisher in the immediate vicinity where welding tools or torches are in use.

D. Furnish and maintain a currently inspected fire extinguisher of the appropriate class and size whenever the temporary storage of materials changes that areas classification of fire load or life safety.

E. Do not use flammable liquids, other than those specified, within a building without the written approval from the Director's Representative.

F. Tarpaulins shall be flameproof and shall be securely anchored when attached to scaffolding or when used to enclose any portion of a building.

G. If required by the nature of the work and facility regulations, the Contractor shall obtain from the facility and pay all costs associated with "Hot Work Permits" including fire watches to execute

the work of its contract. Perform hot work in accordance with the Fire Code of New York State and the Hot Work Program approved for the work. Prior to, during and after performing hot work, inspect the hot work area for compliance with the requirements of the permitted Hot Work Program.

1. Post signage "Caution: Hot Work In Progress - Stay Clear" in conspicuous locations warning others before they enter a hot work area where the area is accessible to persons other than the operator of the hot work equipment.

1.12 TEMPORARY FIRE PROTECTION

A. If the existing building is to be partially occupied during the course of the project, all existing exits, fire walls, fire barriers and fire protection systems shall be continuously maintained in the occupied phases in compliance with the Fire Code of New York State. Comply with NFPA 241 for items not specifically addressed in the Fire Code of New York State.

B. Those portions occupied by the facility must be available for their use 24 hours a day, seven days a week during the contract period unless otherwise scheduled in these documents.

C. Prior to removal of existing fire walls, fire barriers and fire protection systems, if such removal is part of the work, install equivalent temporary fire walls, fire barriers and fire protection systems as defined in these documents and as approved by the Director's Representative and/or the facilities representative.

D. The cost of all labor, fire watches, variances, materials, installations, maintenance and removal of such temporary fire protection systems or modifications to the existing systems are the responsibility of the Contractor. Install permanent fire walls, fire barriers and fire protection systems, if provided as part of the work, as soon as practical.

1.13 ACCESS ROADS

A. Routes of ingress and egress on the premises to the location of the Work shall be as directed.

B. Keep designated access roads clear of dirt and debris resulting from the Work.

C. All Contracts:

1. Park vehicles in areas where directed.
2. Keep designated parking areas clear of dirt and debris resulting from the Work.
3. If requested, register vehicles which are to be parked at the Facility with the Facility Safety/Security Department.
4. Remove ignition key from unattended vehicles and lock doors.

D. Construction Work Contract: Remove snow from parking areas allocated to all Contractors.

1.14 RUBBISH REMOVAL

A. Clean up and containerize the rubbish (refuse, debris, waste materials, and removed materials and equipment) resulting from the Work at least once a day and more often if the rubbish interferes with the work of others or presents a hazard. Leave work areas broom clean, except where more stringent cleaning is specified, at the end of each day. Locate containerized rubbish on the Site where directed.

B. Remove rubbish from State property at least once a week and more often if the rubbish presents a hazard. Properly dispose of rubbish.

C. Burning of rubbish will not be permitted.

1.15 RELOCATION AND REMOVALS

A. Should a change in location of any construction facilities and temporary controls be necessary in order to progress the Work properly, remove and relocate such items as directed.

1. Electrical Work Contract: Frequently relocate/revise the temporary lighting as Contractors progress the Work of their contracts causing changes to the condition of the building (installation or relocation of walls, partitions, ceilings, equipment, etc.). Keep pace with the changes and maintain a minimum of 10 foot candles in each recomposed work area.

B. Remove the construction facilities and temporary controls when they are no longer required. Restore permanent facilities used for or connected to temporary facilities to their original condition or better.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 015000

SECTION 016500 – MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Specific requirements pertaining to materials and equipment specified elsewhere are additional to the provisions of this Section.

1.2 PRODUCT LABELS

A. When materials or equipment are specified to conform to ASTM, Federal or other reference specifications, the materials delivered to the site shall bear the manufacturer's printed labels stating that the materials meet the requirements of such referenced specifications.

1.3 TRANSPORTATION AND HANDLING

A. Deliver factory packaged materials and equipment in the manufacturer's original containers.

B. Transport and handle materials and equipment in such a manner as to prevent their damage.

C. Arrange for delivery of materials and equipment during the hours of the day established by the Director's Representative.

D. Have workers available to receive and unload materials and equipment delivered to the site. Do not deliver, or have delivered, any materials and equipment to the site unless such forces are available.

E. Facility personnel are not authorized to sign for receipt of Contractor's material or equipment.

1.4 STORAGE AND PROTECTION

A. Neatly pile, store, protect, and secure materials and equipment in locations where directed.

B. Protect materials and equipment subject to damage by temperature or other weather conditions.

C. Do not store volatile liquids in a State building.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 016500

SECTION 017329 – REMOVALS, CUTTING, AND PATCHING

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. Rubbish Removal: Section 015000.

B. Asbestos Abatement: Section 028213.

C. Drawings and general provisions of the contract, including general and supplementary conditions and other Division 1 specification sections, apply to this section.

1. Refer to Division 1 for applicable local codes and regulations.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to remain the Property of the State.

1.3 PROJECT CONDITIONS

A. Existing Conditions: Do not disturb existing structures, construction, materials or equipment unless required by the Contract.

1. Do not cut, drill, or remove structural members such as joists, beams or columns supporting construction that is to remain unless expressly required by the Contract Documents.

B. Existing Paint: A lead survey was performed on existing surfaces for the presence of lead based paints. A list of the surfaces tested and the results of the survey are in Document 003126. Take precautions as required to prevent the spread of lead containing particles and dust.

1. Assume existing painted surfaces that have not been tested to contain lead based paint. Take precautions as required to prevent spread of lead containing particles and dust.

C. Items to Remain the Property of the State: The following items shall remain the property of the State and shall be stored at the site where directed:

1. HVAC Work Contract: VAV (Variable Air Volume) box.

1.4 DESCRIPTION OF WORK

A. This section includes the following:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.
4. Temporary Shoring of the existing structure.

1.5 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm specializing in demolition work similar in material and extent of this project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Standards: Comply with ANSI A10.6, OSHA Regulations, and NFPA 241.

D. Predemolition Conference: Hold a conference at project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to selective demolition including the following:

1. Inspect and discuss condition of construction to be selectively demolished.
2. Finalize selective demolition schedule, and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
4. Review areas where existing construction is to remain and requires protection.

E. Structural Load Limitations of Existing Structure: Review load limitations of existing building structural framing system related to selective demolition including the following:

1. Original building Construction Drawings provided by Owner.
2. Condition of existing framing systems scheduled to remain prior to start of selective demolition and periodically during course of selective demolition.
3. Support requirements for proposed demolition equipment, including existing framing systems and temporary shoring and bracing requirements.

1.6 SUBMITTALS

A. Qualification Data: For demolition firm; Professional Engineer.

B. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Facility's on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.

3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of stairs.
5. Locations of proposed dust- and noise-control temporary partitions and means of egress.
6. Coordination of Facility's continuing occupancy of portions of existing building and of Facility's partial occupancy of completed work.
7. Means of protection for items to remain and items in path of waste removal from building.
8. Verification by a New York State registered Professional Engineer that the existing building framing systems will safely support the demolition equipment proposed for use.

    a. Submit temporary shoring and bracing details if required for demolition equipment used in or adjacent to structure.
    b. Submit procedures used to protect adjacent properties from damage by demolition equipment.

9. Means and methods of temporary shoring stamped by a New York State registered Professional Engineer, including copies of calculations.

C. Predemolition photographs or video: Submit before work begins.

1.7 PROJECT CONDITIONS

A. Hazardous Materials: It is not expected that hazardous materials will be encountered in the work.

1. Hazardous materials will be removed under separate contract.
2. If materials suspected of containing hazardous materials are encountered, do not disturb. Immediately notify Director's Representative.
3. If materials suspected of containing hazardous materials are encountered, do not disturb. Immediately notify Director's Representative.

1.8 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition by methods and with materials so as not to void existing warranties. Notify warrantor before proceeding. Existing warranties include the following:

1. Roofing membrane.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Match the appearance and performance of existing corresponding materials as closely as practicable, unless otherwise indicated.

2.2 MINIMUM REQUIREMENTS FOR SHORING MATERIALS

A. Shoring components and materials that are damaged shall not be used. If damaged during use, replace.

B. Shoring components and materials shall be reviewed by a competent person prior to use

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to cutting, drilling or removal, investigate both sides of the surface involved. Determine the exact location of structural members.

B. If unforeseen obstructions are encountered, take precautions necessary to prevent damage and obtain instructions from the Director's Representative before proceeding with the Work.

3.2 PREPARATION

A. Provide temporary shoring and other supports necessary to prevent settlement or other damage to existing construction which is to remain.

B. Prepare existing surfaces properly to receive and, where required, bond with the Work.

C. Site Access and Temporary Controls: Perform selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection specified in Division 1 Section 015000 "Temporary Facilities and Controls."

D. Temporary Facilities: Provide temporary barricades and other protection

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection during interval between selective demolition of existing construction on exterior surfaces and new construction to prevent water leakage and damage to structure and interior areas.
3. Provide secure barriers between existing construction scheduled to remain and selective demolition area to prevent unauthorized entry into occupied portions of building.
4. Protect walls, ceilings, floors, and other existing finish work to remain or are exposed during selective demolition operations.
5. Cover and protect furniture, furnishings, and equipment not removed.
6. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Division 1 Section 015000 "Temporary Facilities and Controls."

3.3 REMOVALS, CUTTING, AND ALTERING

A. In addition to the items indicated to be removed on the Drawings, remove existing construction superseded by the Work except items such as pipes, conduits, recessed boxes, and ducts which are built into existing construction that is to remain. Cut off and conceal such items at face of remaining construction. Provide cover plates on recessed boxes.

B. Remove and alter existing construction as required to install and connect the Work to adjacent construction in an approved manner.

C. Cut and alter existing materials as required to perform the Work. Limit cutting to the smallest amount necessary. Core drill round holes and saw cut other openings where possible.

D. Perform cutting, drilling, and removals in a manner which will prevent damage to construction which is to remain.

E. Perform removal of items to remain the property of the State with such care as necessary to prevent damage to these items.

3.4 PATCHING

A. Patch existing construction and finishes defaced, damaged, or left incomplete due to alterations and removals. Patching, except as otherwise indicated, shall be limited to the areas which have been cut or altered. Finish patched surfaces to match existing adjacent surfaces as closely as practicable.

B. Perform patching around items penetrating existing construction in a manner that will maintain the water and fire resistive capability of the existing construction.

C. Paint patched areas to match existing adjacent surfaces as closely as practicable using same type of paint. Painting, except as otherwise indicated, shall be limited to the areas which have been patched.

D. Where surfaces exposed by removals are to remain as exposed surfaces, paint such areas to match existing adjacent surfaces as closely as practicable using same type of paint.

3.5 CLEANING

A. After removals of ceiling systems and ceiling-related items, clean all remaining near ceiling items such as conduit, wiring, busways, piping, ductwork and all concrete surfaces.

3.6 REINSTALLATION

A. Where reinstallation of removed items is indicated, reinstall them to a condition equal to or better than their condition before removal.

3.7 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain. Protect against damage during selective demolition operations.

1. Comply with requirements for existing services/systems interruptions specified in Division 1 Section 011000 “Summary of the Work.”

B. Existing Service/System to be removed, relocated, or abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Director’s Representative will arrange to shut off indicated services/systems when requested by Contractor.
2. Arrange to shut off indicated utilities with utility companies.
3. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and maintain continuity of services/systems to other parts of building.

C. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing. Cut, remove and legally dispose of selected HVAC equipment, components, and materials as indicated, including, but not limited to removal of HVAC piping, heating units and trim and other HVAC items made obsolete by the new work.

3.8 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to extent required by construction and as indicated. Use methods required to complete work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on next lower level.
2. Neatly cut openings and holes plumb, square, and true dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials. Promptly dispose off-site.

7. Remove structural framing members, and lower to ground by methods suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly.

    a. Do not bury waste materials from selective demolition activities.
    b. Do not dispose of waste materials resulting from selective demolition activities into watercourses, storm drainage system, or sanitary sewer system.
    c. Do not discharge water containing suspended materials into watercourses, storm drainage system, sanitary sewers, or onto adjacent property.

10. When unanticipated structural, mechanical, or electrical elements are encountered during demolition, contact the Director's Representative and report nature of unanticipated condition. Do not progress demolition until direction is provided by the Director's Representative.
11. Cover or dampen dry materials and waste sufficient to prevent blown dust or debris.

B. Do not demolish building elements beyond what is indicated in drawings without Director's Representative approval.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Director's Representative, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.9 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw. Remove concrete between saw cuts.

B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain using power-driven saw. Remove masonry between saw cuts.

C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished. Break up and remove.

D. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings."

E. Roofing: Remove no more existing roofing than what can be covered in one day by new roofing and so that building interior remains watertight and weathertight.

3.10 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be reused, recycled, salvaged, reinstalled, or otherwise indicated to remain the State's property, remove demolished materials from project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow demolished materials to accumulate on-site.

2. Remove and transport debris in manner that will prevent spillage on adjacent surfaces areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off property and legally dispose.

3.11 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.12 REPAIR OF ELEMENTS DAMAGED DURING DEMOLITION

A. Any element damaged during the demolition process is to be repaired to its original condition.

B. Submit a repair procedure for review. Repair procedures are to include analysis stamped and sealed by a professional engineer licensed in the State of New York.

END OF SECTION 017329

SECTION 017716 – CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Other provisions pertaining to this Section are included in Article 9 of the General Conditions.

1.2 CONTRACT CLOSEOUT INSPECTIONS

A. The following 3 inspections will be made in addition to the normal inspections to ensure that all Contract requirements are met and that the Work is complete and acceptable. The purpose of each of these inspections is to furnish the Contractor a written list of Contract exceptions, omissions, and incompletions so that the Work can be progressed to timely completion in accordance with the Contract Documents.

1. Detailed Inspection: The "Detailed Inspection" will be made when the Work is substantially complete. A copy of the detailed inspection list will be furnished to the Contractor. When this inspection progresses over any length of time, copies of the list will be furnished as the inspection progresses so that the Contractor may proceed with the required Work without delay.
2. Final Inspection: The Contractor will be advised by letter of the date and time of final inspection. A copy of the final inspection list containing all incomplete or unsatisfactory items and the time allowed to complete the Work will be furnished to the Contractor.
3. Joint Inspection for Physical Completion: The joint inspection for physical completion may be made to verify completion of the exception items listed on the final inspection list so that the physical completion date (defined in the General Conditions) may be established.

1.3 FINAL CLEANING

A. Perform final cleaning prior to joint inspection for physical completion. Leave the premises in a neat, unobstructed condition, the work areas broom clean (except where more thorough cleaning is specified), and everything in perfect repair and adjustment.

B. Clean site; sweep paved areas, rake clean landscaped surfaces.

C. Remove tools, equipment, waste and surplus materials, rubbish, and construction facilities from the premises as soon as possible upon completion of the Work.

1.4 PROJECT RECORD DOCUMENTS

A. Maintain on site, 2 sets of the following record documents; record actual revisions to the Work.

1. Contract Drawings.

2. Project Manual.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. Reviewed shop drawings, product data, and samples.

B. Store record documents separate from documents used for construction.

C. Record information concurrent with construction progress.

D. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including.

1. Measured depths of foundations in relation to finish (first) (main) floor datum.
2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
4. Field changes of dimension and detail.
5. Details not on original Contract Drawings.

E. Upon completion of the work, create electronic versions of the project record documents. Black and white documents are to be scanned into TIFF format using CCIT Group 4 compression. Documents with color, which include black line documents with color notations, are to be scanned into TIFF format using a minimum of 8 colors and "packbits" compression test.

1. The scanned images are to be put on a USB flash drive using NTFS/NTFS5 format. Name the electronic files with the same name as the drawing. Create a folder on the USB flash drive for each trade and one for Shop Drawings.
2. Label the USB flash drive with the project number, name, and title as it appears on the project manual cover. If there is more than one USB flash drive include notation to that effect on the label; i.e., 1 of 3, 2 of 3, 3 of 3. The project record documents, and USB flash drive(s) are to be turned over to the Director's Representative.

F. Applications for progress payments will not be approved if the record documents are not kept current. Application for final payment will not be approved until the project record documents are delivered to the Director's Representative.

1.5 OPERATION AND MAINTENANCE DATA

A. Prepare 2 sets comprised of 8-1/2 x 11 inch text pages bound in capacity expansion binders with durable plastic covers identified with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required. Prepare a printed Table of Contents for each volume, with each product or system description identified. Internally subdivide the binder contents with permanent page dividers, logically organized as described below, with tab titles clearly printed under reinforced laminated plastic tabs:

Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, subcontractors, and major equipment suppliers.

Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of subcontractors and suppliers. Identify the following:

1. Significant design criteria.
2. List of equipment.
3. Parts list for each component.
4. Operating instructions.
5. Maintenance instructions for equipment and systems.
6. Maintenance instructions for finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

Part 3: Project documents and certificates, including the following:

1. Shop drawings and product data.
2. Air and water balance reports.
3. Certificates.
4. Photocopies of warranties.

B. Submit one copy of completed volumes in final form 15 days prior to final inspection. This copy will be returned after final inspection, with the Director's comments. Revise content of documents as required prior to final submittal.

C. Submit 2 volumes prior to final Application for Payment.

1.6 WARRANTIES

A. Furnish warranty certification and copies of warranties that extend beyond the one year period required by the General Conditions. Warranties submitted without warranty certification will not be accepted.

1. Warranty Certification: Written certification from the warrantor that invoices for installation, service, supplies, and warranty fees have been paid in full to persons or firms due payment, and that the warranty is in effect and non-retractable due to any of the specified conditions.

B. Prepare printed Table of Contents and assemble warranty certifications and warranty copies in a binder with a durable plastic cover.

C. Deliver the binder to the Director's Representative prior to final Application for Payment.

D. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance, indicating date of acceptance as start of warranty period.

E. Applications for final payment will not be approved until the warranty certification and warranty documents are delivered to the Director's Representative.

1.7 SPARE PARTS AND MAINTENANCE MATERIALS

A. Label and deliver spare parts, maintenance items, and extra materials to the Site. Place in locations as directed.

1. Include “NOT FOR WARRANTY REPAIRS” on the labels.
2. Obtain receipt prior to final payment.

B. Do not use the spare parts and maintenance materials required by the Contract Documents to remedy defects during the one-year period described in Paragraph 9.8 of the General Conditions except when approved otherwise by authorized Facility Representative. In such cases, replace items used.

C. Furnish the names, business addresses, and telephone numbers of fully equipped authorized service organizations to the Director’s Representative.

D. Applications for final payment will not be approved until these items are delivered to the Director’s Representative.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 017716

SECTION 017900.01 - VIDEO TRAINING PROGRAMS

PART 1 - GENERAL

1.1 DESCRIPTION

A. This Section includes administrative and procedural requirements for instructing the Owner's and operations and maintenance personnel, including the following:

1. Demonstration of operation of systems, subsystems, and equipment. Contractor shall develop training sessions for systems, subsystems, and equipment.
2. Training in operation and maintenance of systems, subsystems, and equipment.

B. Demonstration and training requirements are described in this section, Section 019100, and in the technical sections of Divisions 22, 23, and 26. The Contractor shall comply with the requirements for demonstration and training data described in all specification sections.

1.2 RELATED WORK

A. Specific commissioning requirements are given in the following sections of these specifications. All the following sections apply to the Work of this section:

1. Section 017716 – Contract Closeout.
2. Section 019113 – Commissioning.
3. Section 210800 - Commissioning of Fire Suppression.
4. Section 220800 - Commissioning of Plumbing.
5. Section 230800 - Commissioning of HVAC.
6. Section 260800 - Commissioning of Electrical.

1.3 SUBMITTALS

A. Instruction Program: No later than two (2) months following acceptance of equipment and system submittals, the responsible contractor shall submit written training plans to the CxA and State for review and approval per Section 019100 and this section.

B. Documentation: After each training session, submit the following:

1. Attendance Roster: Submit list of participants and length of instruction time.
2. Evaluations: For each participant and for each training session, submit results and documentation of performance-based test and student evaluations of training.

1.4 COORDINATION

A. Coordinate instruction schedule with Director’s Representative.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training sessions with content of approved operation and maintenance manuals.

1.5 QUALITY ASSURANCE

A. Facilitator Qualifications: Training shall be facilitated by a firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

B. Instructor Qualifications: Instructors shall be factory-authorized representatives experienced in operation and maintenance procedures and training.

C. Pre-instruction Conference: Conduct conference at project site. Review methods and procedures related to demonstration and training including, but not limited to, the following:

1. Inspect and discuss locations and other facilities required for instruction, including classroom training and field training.
2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, and audio/visual equipment.
3. Review required content of instruction.
4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

A. Program Structure: Develop a comprehensive instruction program. Include individual training sessions for each system and equipment not part of a system as required by technical specification sections and the Cx Plan.

B. Training Sessions: Coordinate training with the CxA. Develop a learning objective and teaching outline for each system, subsystem, and product specified in Section 019100 and Divisions 22, 23, and 26. Include a description of specific skills and knowledge that participants are expected to learn.

C. The following list of topics should be applied to each training plan for each equipment or system being presented. Not all will apply, but each major category should be addressed in the training plan with a brief description of how it pertains to the particular training sessions.

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

a. System, subsystem, and equipment descriptions.
b. Performance requirements.
c. Operating standards.
d. Regulatory requirements.
e. Equipment function.
f. Operating characteristics.
g. Limiting conditions.
h. Performance curves.

2. Documentation: Review the following items in detail:
    a. Operations manuals.
    b. Maintenance manuals.
    c. Project Record Documents.
    d. Identification systems.
    e. Warranties and bonds.
    f. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following:

    a. Instructions on meaning of warnings, trouble indications, and error messages.
    b. Instructions on stopping.
    c. Shutdown instructions for each type of emergency.
    d. Operating instructions for conditions outside normal operating limits.
    e. Sequences for electric or electronic systems.
    f. Special operating instructions and procedures.

4. Operations: Include the following:

    a. Startup procedures.
    b. Equipment or system break-in procedures.
    c. Routine and normal operating instructions.
    d. Regulation and control procedures.
    e. Control sequences.
    f. Safety procedures, including lockout/tagout requirements.
    g. Instructions on stopping.
    h. Normal shutdown and restart instructions.
    i. Operating procedures for system, subsystem, or equipment failure.
    j. Seasonal and weekend operating instructions.
    k. Required sequences for electric or electronic systems.
    l. Special operating instructions and procedures.

5. Adjustments: Include the following:

    a. Alignments.
    b. Checking adjustments.
    c. Noise and vibration adjustments.
    d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

    a. Diagnostic instructions.
    b. Test and inspection procedures.

7. Maintenance, Care and Cleaning: Include the following:

    a. Inspection procedures.
    b. Types of cleaning agents to be used and methods of cleaning.
    c. List of recommended cleaning agents and methods of cleaning and list of agents and cleaning methods detrimental to product.

d. Procedures for routine cleaning.
e. Procedures for preventive/predictive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

D. Training Shifts: Training shall be provided for one shift, unless otherwise noted. Training shall be accomplished during normal business hours.

E. Training Duration: Duration of training and demonstration is addressed in Section 019100. Training and demonstration duration for specific items within a training session may be adjusted with Facility's approval to meet the overall goals of the training session.

PART 3 - EXECUTION

3.1 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training sessions. Assemble training sessions into a combined training manual.

B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

A. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide instruction on actions necessary to prepare for and execute seasonal changeover.

1. Schedule training through the Facility with at least 30 days notice. This requirement for notice takes precedence over other advance notice requirements in the specification.

B. Quality and Contents of Training Sessions: Each training session shall include the following.

1. Training plan for each class. Training plan shall contain:

a. Class objectives (what the student will learn).
b. Script of lecture and demonstrations.
c. Duration of each instruction period.
d. Participant attendance roster.
e. Participant evaluation survey form.

2. Names of instructors, name of company where employed, their credentials and affiliation with product if applicable and their qualifications as instructor.
3. Name of company who will videotape the classes. Include video script coordination with instructor's syllabus.
4. Training session information shall be submitted to CxA for approval.

C. Evaluation: At conclusion of each training session, assess and document training.

1. Assess and document each participant's comprehension of session by use of an oral performance-based test.
2. Obtain each participant's evaluation of the training.

D. Cleanup: Collect used and leftover educational materials. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

E. Record of Training. Submit the attendance roster as part of the completed training plan upon successful completion of the training session.

END OF SECTION

SECTION 019113 - GENERAL COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies the Contractor's responsibilities in the commissioning process. Commissioning requires the participation of the Contractor to ensure that all systems are operating in a manner consistent with the Contract Documents.

B. The commissioning process integrates the traditionally separate functions of system documentation, equipment startup, performance testing and training. Commissioning during the construction phase is intended to achieve the following specific objectives in accordance with the Contract Documents:

1. Verify and document that applicable equipment and systems are installed according to the manufacturer's recommendations, contract requirements, and industry standards and that they receive adequate operational checkout by installing contractors.
2. Verify and document proper performance of equipment and systems.
3. Verify and document that O&M documentation is complete.
4. Verify and document that the Facility operating personnel are properly trained.

C. The systems and equipment to be commissioned are listed in this Section. The Contractor's general commissioning requirements and coordination are detailed in this Section. Specific requirements for commissioning of each system or piece of equipment are detailed in the specification Section for the individual systems or pieces of equipment. A detailed description of the overall commissioning process is included in the appendix.

D. The commissioning process does not reduce the responsibility of the Contractor to provide finished and fully functional systems and equipment.

1.2 SYSTEMS TO BE COMMISSIONED

A. The following systems will be commissioned in this project. Specific requirements for the commissioning of each system are included in the related specification Section.

1. HVAC Work Contract:

a. HVAC Systems.
b. Building Controls.

2. Plumbing Work Contract:

a. Domestic Hot Water System.

3. Electrical Work Contract:

a. Lighting Controls.

B. Example Commissioning Documents: Example Pre-Functional Checklists and Functional Test Procedures are provided following the specification Sections of equipment and systems that are scheduled to be commissioned. These documents are included to provide the Contractor examples of the type of documentation that will be required as part of the commissioning process. Equipment and system specific Pre-Functional Checklists and Functional Test procedures will be developed by the Commissioning Authority based on approved submittals, and then will be provided to the Contractors.

1.3 DEFINITIONS

A. Acceptance Phase: Phase of construction after startup and initial checkout when functional performance tests, O&M documentation review and training occurs.

B. Approval: Acceptance that a piece of equipment or system has been properly installed and is functioning in the tested modes in accordance with the Contract Documents.

C. Commissioning authority (CA): An independent agent responsible for the direction and coordination of the commissioning activities. The CA responsible to the Director's Representative.

D. Commissioning Plan: An overall plan that provides the structure, schedule and coordination planning for the commissioning process.

E. Commissioning Team: The members of the commissioning team consist of the Commissioning Authority, the Director's Representative, the Contractor, the architect and design engineers. The owner and the building or plant operator/engineer also may be members of the commissioning team.

F. Deferred Functional Tests: Functional tests that are performed after substantial completion, due to partial occupancy, seasonal requirements, design or other site conditions that prevent the test from being performed prior to substantial completion.

G. Deficiency: A condition in the installation or function of a component, piece of equipment or system that is not in compliance with the Contract Documents.

H. Factory Testing: Testing of equipment on-site or at the factory by factory personnel.

I. Functional Performance Test (FT): Test of the dynamic function and operation of equipment and systems using manual (direct observation) or monitoring methods. Functional testing is the dynamic testing of systems (rather than just components) under full operation. Systems are tested under various modes, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying outside air temperatures, fire alarm, power failure, etc. The CA develops the functional test procedures in sequential written form. The CA coordinates, oversees and documents the actual testing. The Contractor performs the functional tests. FTs are performed after prefunctional checklists and startup are complete.

J. Phased Commissioning: Commissioning that is completed in phases (by floors, for example) due to the size of the structure or other scheduling issues, in order to minimize the total construction time. Commissioning shall be provided for each phase according to the schedule for that phase. Some repetition and/or remobilization may be required.

K. Prefunctional Checklist (PC): A list of items to inspect and component tests to conduct to verify proper installation of equipment prior to initiating functional testing.

L. Startup: The initial starting or activating of dynamic equipment, including executing prefunctional checklists.

1.4 COORDINATION

A. The CA is hired by, and works for, the Director. The CA directs and coordinates the commissioning activities. All members of the commissioning team shall work together to fulfill their contractual responsibilities and meet the objectives of the Contract Documents.

B. The CA will work with the Contractor according to established protocols to schedule the commissioning activities. The Contractor shall integrate all commissioning activities into the approved progress schedule. All parties will address scheduling problems and make necessary notifications and changes in a timely manner in order to expedite the commissioning process and maintain the approved progress schedule.

1.5 COMMISSIONING PROCESS

A. Commissioning Plan. The commissioning plan provides guidance in the execution of the commissioning process. Following the initial commissioning scoping meeting the CA will update the plan which is then considered the "final" plan, although it may be revised as the project progresses.

B. Commissioning Process. The following narrative provides a brief overview of the typical commissioning tasks during construction and the general order in which they occur. A more detailed description of the commissioning process can be found in the Appendix.

1. Commissioning during construction begins with a scoping meeting conducted by the CA where the commissioning process is reviewed with the Commissioning Team.
2. Additional meetings will be required throughout construction, scheduled by the Director's Representative, to plan, scope, coordinate, and schedule future activities and to resolve problems. When possible, commissioning meetings will be scheduled immediately following construction meetings.
3. Equipment documentation is submitted to the CA during the submittal process, including detailed start-up procedures.
4. The CA works with the Contractor to develop startup activity lists and startup documentation. The CA provides prefunctional checklists to be completed by the Contractor during the startup process.
5. In general, the checkout and performance verification proceeds from simple to complex; from component level to equipment to systems and intersystem levels. In each case

prefunctional checklists are completed, submitted, and approved before functional testing begins.

6. The Contractor executes and documents the prefunctional checklists, and provides notification to the Director's Representative and the CA. The Contractor performs startup and initial checkout. The CA documents that the checklists and startup were completed according to the approved plans.
7. The CA develops specific equipment and system functional performance test procedures. The Contractor reviews the procedures and submits suggestions or comments. Procedures are finalized by the CA.
8. The procedures are executed by the Contractor, under the direction of the CA.
9. Items of non-compliance in material, workmanship, or setup are corrected and retested at the Contractor's expense. The Contractor is responsible for providing all resources, manpower, and materials necessary to rectify deficiencies as per requirements of the approved schedule.
10. The O&M documentation prepared by the Contractor is reviewed for completeness by the CA.
11. Commissioning is completed before Substantial Completion.
12. The CA reviews, pre-approves and coordinates the training provided by the Contractor and verifies that is was completed.
13. Deferred testing is conducted, as specified or required.

1.6 CONTRACTOR'S RESPONSIBILITIES

A. The Contractor's commissioning responsibilities are as follows (all references apply to commissioned systems and equipment only):

1. Construction and Acceptance Phase:

   a. Attend the commissioning scoping meeting and other necessary meetings scheduled by the Director's Representative to facilitate the commissioning process.
   b. Facilitate the coordination of the commissioning work by the CA, and with the CA ensure that commissioning activities are being scheduled into the approved progress schedule.
   c. Provide detailed manufacturer installation and start-up, operating, troubleshooting and maintenance procedures, factory test reports, and full warranty information, including all responsibilities of the Director to keep the warranty in force. The installation, start-up and checkout materials that are actually shipped with the equipment and the actual field checkout sheet forms to be used by the factory or field technicians shall be submitted to the CA. The CA may request further documentation necessary for the commissioning process.
   d. In each purchase order or subcontract written, include requirements for submittal data, O&M data, commissioning tasks and training.
   e. Ensure that all subcontractors execute their commissioning responsibilities according to the Contract Documents and approved progress schedule.
   f. Assist in the process of writing detailed test procedures by clarifying the operation and control of commissioned equipment.
   g. Review test procedures to ensure feasibility, safety and equipment protection and provide necessary written alarm limits to be used during the tests.

h. Develop a full start-up and testing plan using manufacturer's start-up procedures and the prefunctional checklists from the CA for all commissioned equipment. Submit to the CA for review and approval prior to startup.
i. During the startup and initial checkout process, execute all portions of the prefunctional checklists for all commissioned systems and equipment. Verify that system installations include all ports, gages, thermometers, access doors, valves, etc., required for specified functional performance testing.
j. Provide all special tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment.
k. Perform and clearly document all completed startup and system operational checkout procedures, providing a copy to the CA.
l. Address incomplete Work before functional performance testing.
m. Provide skilled technicians to execute startup of equipment and to execute the functional performance tests. Ensure that they are available and present during the agreed upon schedules and for sufficient duration to complete the necessary tests, adjustments and problem-solving.
n. Provide skilled technicians to perform functional performance testing under the direction of the CA for specified equipment. Provide Manufacturer's Representative as required and as specified in the Specification. Assist the CA in interpreting the monitoring data, as necessary.
o. Correct deficiencies (differences between specified and observed performance) as directed by the Director's Representative.
p. Prepare O&M manuals according to the Contract Documents, including clarifying and updating the original sequences of operation to as-built conditions. Provide a copy of the O&M manuals and submittals of commissioned equipment to the CA for review and approval.
q. Provide training as specified.
r. Coordinate with equipment manufacturers to determine specific requirements to maintain the validity of the warranty.

2. Warranty Period:

a. Execute seasonal or deferred functional performance testing in accordance with the specifications
b. Correct deficiencies and make necessary adjustments to O&M manuals and as-built drawings for applicable issues identified in any seasonal testing.

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

A. All standard testing equipment required to perform startup and initial checkout and required functional performance testing shall be provided by the Contractor.

B. Specified special equipment, tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment shall be provided by the Contractor and turned over to the facility at the completion of the Work.

C. Datalogging equipment and software required to test equipment will be provided by the Contractor but shall not become the property of the Director's Representative.

D. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the Specifications. All equipment shall be calibrated according to the manufacturer's recommended intervals. Calibration tags shall be affixed or certificates readily available.

PART 3 - EXECUTION

3.1 MEETINGS

A. Scoping Meeting. Prior to the commencement of construction, the CA will schedule, plan and conduct a commissioning scoping meeting with the Commissioning Team.

B. Miscellaneous Meetings. Other meetings will be planned and conducted by the CA as construction progresses. These meetings will cover coordination, deficiency resolution and planning issues with the Contractor, appropriate sub-contractors and suppliers, the Owner's Representative, and the Director's Representative.

3.2 START-UP, PREFUNCTIONAL CHECKLISTS, AND INITIAL CHECKOUT

A. Prefunctional checklists and initial checkout shall ensure that the equipment and systems are hooked up and operational. Each piece of equipment receives full prefunctional checkout. No sampling strategies are used. The prefunctional testing for a given system must be successfully completed prior to formal functional performance testing of systems or equipment.

B. Start-up and Initial Checkout Plan. The CA shall assist the commissioning team members responsible for startup of any equipment in developing detailed start-up plans for all equipment. The primary role of the CA in this process is to ensure that there is written documentation that each of the manufacturer's recommended procedures have been completed.

C. Execution of Prefunctional Checklists and Startup.

1. Four weeks prior to startup, the Contractor shall schedule startup and checkout with the Director's Representative.
2. The Contractor shall execute startup and provide the CA with a signed and dated copy of the completed start-up and prefunctional tests and checklists.

3.3 FUNCTIONAL PERFORMANCE TESTING

A. Development of Test Procedures. Using the requirements in the specifications, the CA shall develop specific test procedures and forms to verify and document proper operation of each piece of equipment and system. The Contractor shall provide assistance to the CA in developing the procedures. Prior to testing, the CA shall provide a copy of the test procedures to the Contractor who shall review the tests for feasibility, safety, equipment and warranty protection.

B. Functional performance testing shall document that each system is operating in accordance with the Contract Documents. During the testing process, areas of deficient performance shall be identified. Deficiencies shall be corrected by the Contractor and functional testing shall be re-scheduled. The Contractor shall be responsible for all costs associated with re-testing for functional performance.

C. Each system shall be operated through all modes of operation. Proper responses to such modes and conditions as power failure, freeze condition, low oil pressure, no flow, equipment failure, etc. shall also be tested.

D. Test Methods. Each function and test shall be performed under conditions that simulate actual conditions as closely as possible. The Contractor shall execute the test and shall provide all necessary materials, system modifications, etc. to produce the necessary flows, pressures, temperatures, etc. necessary to execute the test according to the specified conditions. At the completion of the test, the Contractor shall return all building equipment and systems affected by these temporary modifications to their pre-test condition.

3.4 OPERATION AND MAINTENANCE MANUALS

A. Standard O&M Manuals. The specific content and format requirements for the standard O&M manuals are detailed in Section 017716.

B. The Contractor shall compile and prepare commissioning documentation for all equipment and systems and include this information in the O&M manuals.

3.5 TRAINING

A. The Contractor shall be responsible for coordinating, scheduling, and documenting that all required training has been completed successfully.

B. The Contractor shall have the following training responsibilities:

1. Provide a training plan two weeks before the planned training.
2. Provide comprehensive orientation and training in the understanding of the systems and the operation and maintenance of each piece of equipment.
3. Training shall normally start with classroom sessions followed by hands-on training on each piece of equipment.
4. The training sessions shall follow the outline in the Table of Contents of the operation and maintenance manual and illustrate whenever possible the use of the O&M manuals for reference.
5. Training shall include:

    a. Use of the printed installation, operation and maintenance instruction material included in the O&M manuals.
    b. A review of the written O&M instructions emphasizing safe and proper operating requirements, preventative maintenance, special tools needed and spare parts inventory suggestions. The training shall include start-up, operation in all modes possible, shut-down, and any emergency procedures.

c. Discussion of relevant health and safety issues and concerns.
d. Discussion of warranties and guarantees.
e. Common troubleshooting problems and solutions.
f. Explanatory information included in the O&M manuals and the location of all plans and manuals in the facility.
g. Discussion of any peculiarities of equipment installation or operation.

3.6 DEFERRED TESTING

A. Unforeseen Deferred Tests. If any check or test cannot be completed due to project conditions, required occupancy condition or other deficiency, execution of checklists and functional testing may be delayed upon approval of the Director's Representative. These tests will be conducted in the same manner as the seasonal tests as soon as possible.

B. Seasonal Testing. Seasonal testing (tests delayed until weather conditions are closer to the system's design conditions) shall be completed as part of this contract. Make any final adjustments to the O&M manuals and as-builts resulting from information gained during testing.

END OF SECTION 019113

SECTION 023313 - UNDERGROUND UTILITY LOCATOR SERVICE

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. Field Engineering: Section 017123.

1.2 REFERENCES

A. American Society of Civil Engineers, ASCE/UESI/CI 38-22, “Standard Guideline for Investigating and Documenting Existing Utilities.”

B. American Public Works Association, Uniform Color Code.”

1.3 DEFINITIONS

A. Utility Quality Levels:

1. Level B: Information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities. Quality level B data should be reproducible by surface geophysics at any point of their depiction. This information is surveyed to applicable tolerances defined by the project and reduced onto plan documents.

1.4 DESCRIPTION

A. Retain an independent utility locator service company to field locate and mark existing underground utilities and service connections. The word "independent" as used above means a person not in the regular employment of the Contractor or having any vested interest in the Contractor's business.

1. Level B locator service shall be performed in all project areas where excavations, regrading of the ground surface, and penetrations of the ground surface are to be performed.
2. Support and protect all utilities and service connections to remain in place.
3. The locator service shall field locate and mark underground utilities and service connections prior to excavation.
4. The contractor shall be responsible for coordinating the extent of the areas of subsurface investigation required to locate all underground utilities and service connections in the areas of excavation.

5. All costs associated with the repair of underground utilities and service connections hit/damaged during the investigative work shall be the responsibility of the contractor.
6. Utility location services shall be in accordance with the provisions of ASCE/UESI/CI 38-22, "Standard Guideline for Investigating and Documenting Existing Utilities."

1.5 SUBMITTALS

A. Quality Control Submittals:

1. Submit detailed experience and qualification information about the underground utility locator service company and the persons that will be performing the Work. Detailed experience and qualification information shall include:

    a. Minimum of five (5) years experience in field locating, marking and staking out of existing underground utilities and service connections.

        1) Qualifying Experience: Project information of 5 similar projects, which the locator service company, had worked on during the past 5 years. Information shall include for each project:

            a) Name and Address of project.
            b) Dates worked on project.
            c) Name and telephone Number of contact person at the project site for which the locator service was performed.

    b. Description of types of utility locator equipment (investigation equipment) that company will utilize to perform the underground utility investigation.
    c. Names of persons that the persons that will be performing the Work, including the number of years of experience and training that the persons have in the use of the equipment. Include copy of training certificates for locator equipment proving the person performing the locator service are trained on the equipment being used.

2. Submit Quality Control Submittals within 10 days of contract award.

B. Investigative Report:

1. Submit detailed written report and scaled drawings of the subsurface investigation, documenting all underground utilities and service connections located and identified.

    a. All documentation shall be referenced to existing data (horizontal and vertical) previously established.
    b. Provide three (3) paper copies and one (1) electronic copy of detailed written report and drawings.

2. Submit Investigative Report at least two weeks prior to advancing construction within the scheduled areas of excavation within the project site.

1.6 COORDINATION AND SCHEDULING

A. Coordinate the Work to determine the extent of the areas of subsurface investigation required to locate all underground utilities and service connections in the areas of excavation.

B. Coordinate the Work with the Director's Representative to minimize utility disruptions and facility operations. Provide a schedule for the Work required to the Director's Representative for approval. Upon approval of the schedule, notify the Director's Representative a minimum of three (3) working days prior to performing the Work.

C. Within the areas of excavation, all underground utilities and service connections shall be field located, and their locations marked at least two (2) weeks prior to the performance of the required excavation work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 WORK AREAS AND PERFORMANCE

A. If any underground utilities and service connections are hit or damaged during the Work, immediately inform the Director's Representative for directions on how to proceed.

B. The utility locator service investigative work, field location and marking of underground utilities and service connections and submission of the investigative report must be completed before any excavation work can begin.

1. Contractor shall maintain markings throughout the contract duration or until a time when directed (in writing) by the Director's Representative that maintaining of the markings are no longer required.

C. Provide subsurface investigation information, detailed written report and drawings of the subsurface investigation, documenting all underground utilities and service connections located and identified, prior to the performance of the required excavation work.

D. If during the Level B investigations, unknown underground utilities are discovered, the Director's Representative shall be notified as soon as possible or before the close of that business day.

E. Field Marking of underground utilities shall follow the American Public Works Association (APWA) uniform color code:

1. White: Proposed Excavation.
2. Pink: Temporary Survey Markings.
3. Red: Electric power lines, cables, conduit and lighting cables.
4. Yellow: Gas, oil, steam, petroleum and gaseous material.
5. Orange: Communications, alarm, signal lines, cables or conduit.
6. Blue: Potable water.
7. Purple: Reclaimed water, irrigation and slurry lines.
8. Green: Sewer and drain lines.

END OF SECTION 023313

SECTION 260221- MOTORS AND MOTOR CONTROLLERS

PART 1 - GENERAL

1.1 PRODUCTS FURNISHED BUT NOT INSTALLED

A. Deliver the following items to the Electrical Work Contractor for installation and connection to power wiring:

1. Motor controllers including 2 copies of approved wiring diagrams.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Wiring for Motors and Motor Controllers: Section 260523.

1.3 REFERENCES

A. NEMA MG-1 - Motors and Generators.

B. NEMA ICS - General Standards for Industrial Control and Systems.

C. UL508 - Electric Industrial Control Equipment.

D. IEEE 519 - Recommended Practices and Requirements for Harmonic Control in Electric Power Systems.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Waiver of Submittals: The “Waiver of Certain Submittal Requirements” in Section 013300 does not apply to this Section.

E. Submittal Package: Submit the product data, and quality control submittals specified below at the same time as a package.

F. Product Data:

1. Motor Controllers: Catalog sheets, specifications, and installation instructions. Submit product data for motor controllers simultaneously with product data required for motors.

    a. Identify each controller for use with corresponding motor.
    b. Describe overload devices being supplied with each motor controller (include equipment manufacturer's recommendations).
    c. Enumerate and describe all accessories being supplied with each motor controller.

2. All Motors:

    a. Catalog sheets, specifications and installation instructions.
    b. Data proving that voltage rating of each motor is in accordance with specified NEMA standard motor voltage.
    c. Data proving that the service factor and temperature rise for the motor's insulation system conforms to NEMA standards for each motor's specific application.
    d. Data proving that the motor efficiency rating conforms to NEMA testing and marking standards MG1-12.54 and 12.55.

3. Additional Data for Motors Controlled by Solid State or Adjustable Speed Motor Controllers:

    a. Data proving that the motor has been designed for use with associated controller.

G. Quality Control Submittals:

1. Harmonic analysis report.
2. Company Field Advisor Data: Include:

    a. Name, business address and telephone number of Company Field Advisor secured for the required services.
    b. Certified statement from the Company listing the qualifications of the Company Field Advisor.
    c. Services and each product for which authorization is given by the Company listed specifically for this project.

H. Contract Closeout Submittals:

1. System acceptance test report.
2. Certificate: Affidavit, signed by the Company Field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly.
3. Operation and Maintenance Data: Deliver 2 copies, covering the installed products, to the Director's Representative.

1.5 QUALITY ASSURANCE

A. Equipment Qualifications For Products Other Than Those Specified:

1. At the time of submission provide written notice to the Director of the intent to propose an "or equal" for products other than those specified. Make the "or equal" submission in a timely manner to allow the Director sufficient time to review the proposed product, perform inspections and witness test demonstrations.
2. If products other than those specified are proposed for use furnish the name, address, and telephone numbers of at least 5 comparable installations that can prove the proposed products have performed satisfactorily for 3 years. Certify in writing that the Director's Representative of the 5 comparable installations will allow inspection of their installation by the Director's Representative and the Company Field Advisor.

    a. Make arrangements with the Director's Representative of 2 installations (selected by the Director) for inspection of the installations by the Director's Representative. Also obtain the services of the Company Field Advisor for the proposed products to be present. Notify the Director a minimum of 3 weeks prior to the availability of the installations for the inspection, and provide at least one alternative date for each inspection.
    b. Only references from the actual Director's Representative (Security Supervisor, Maintenance Supervisor, etc.) will be accepted. References from dealers, system installers or others, who are not the actual Director's Representative of the proposed products, are not acceptable.

        1) Verify the accuracy of all references submitted prior to submission and certify in writing that the accuracy of the information has been confirmed.

3. The product manufacturer shall have test facilities available that can demonstrate that the proposed products meet the contract requirements.

    a. Make arrangements with the test facility for the Director's Representative to witness test demonstrations. Also obtain the services of the Company Field Advisor for the proposed product to be present at the test facility. Notify the Director a minimum of 3 weeks prior to the availability of the test facility, and provide at least one alternative date for the testing.

4. Provide written certification from the manufacturer that the proposed products are compatible for use with all other equipment proposed for use for this system and meet all contract requirements.

B. Harmonic Analysis:

1. The adjustable speed motor controller manufacturer shall perform a harmonic current magnitude and voltage distortion analysis and provide certified calculations specific to this installation, showing that the total harmonic distortion caused by the adjustable speed motor controller will be below the specified level. The analysis shall be accordance with IEEE 519.
2. The results shall be based on a computer aided/modeled circuit simulation of the actual system, based upon the materials and equipment proposed to be furnished and installed.

C. Company Field Advisor: Secure the services of a Company Field Advisor from the Company providing the solid state controllers and the adjustable speed controllers for a minimum of 8 working hours for the following:

1. Render advice regarding installation, programming, final adjustment, and testing.
2. Witness final system test and then certify with an affidavit that the motor controllers are installed in accordance with the contract documents and are operating properly.
3. Train facility personnel on the operation and maintenance of the motor controllers (minimum of two 1 hour sessions).
4. Explain available service programs to facility supervisory personnel for their consideration.

D. Service Availability: A fully equipped service organization shall be available to service the completed Work.

PART 2 - PRODUCTS

2.1 MOTORS

A. Classification:

1. Classification According to Application: Comply with NEMA standards for general-purpose alternating-current squirrel-cage induction motors, except:

   a. Furnish NEMA definite-purpose or special-purpose motors when required to suit the application.
   b. Furnish NEMA type other than squirrel-cage construction when required to suit the application.

2. Classification According to Environmental Protection and Methods of Cooling: Comply with NEMA requirements for a dripproof machine unless otherwise specified or indicated on the drawings, or required to suit the application.

B. Efficiency: Motors shall be stamped with a NEMA nominal efficiency rating in accordance with NEMA testing and marking standards MG1-12.54 and 12.55.

1. Nominal full-load three phase motor efficiency:

OPEN MOTORS			
RPM	**1200**	**1800**	**3600**
HP			
1.0	80.0	82.5	
1.5	84.0	84.0	82.5
2.0	86.5	84.0	84.0
3.0	86.5	86.5	84.0
5.0	88.5	87.5	85.5
7.5	89.5	88.5	87.5
10	90.2	89.5	88.5
15	91.0	90.2	89.5
20	90.2	91.0	90.2
25	91.7	92.4	91.0

30	92.4	93.0	92.4
40	93.0	93.0	92.4
50	92.4	94.1	92.4
60	93.0	93.6	93.0
75	93.6	94.1	93.6
100	93.6	94.1	93.6
125	94.1	94.1	93.6
150	94.5	94.5	94.5
200	94.5	95.0	95.4

CLOSED MOTORS			
RPM	**1200**	**1800**	**3600**
HP			
1.0	81.5	84.0	
1.5	85.5	85.0	84.0
2.0	86.5	84.0	85.5
3.0	88.5	88.5	86.5
5.0	88.5	88.5	87.5
7.5	89.5	91.0	88.5
10	89.5	91.0	89.5
15	90.2	91.0	89.5
20	91.0	91.7	90.2
25	91.7	92.4	90.2
30	92.4	93.6	91.0
40	93.0	93.0	91.0
50	93.6	93.6	92.4
60	93.6	94.1	94.1
75	94.1	94.5	94.1
100	94.1	95.0	94.1
125	94.1	95.0	94.1
150	95.0	95.0	94.1
200	95.0	95.8	95.01

C. Motor (Nameplate) Voltage:

1. 120/208 V, Three Phase, 4W, Premises Wiring Systems:

   a. Motors Less Than 1 hp: NEMA standard motor voltage 115 V, single phase, 60 Hz.
   b. Motors 1 hp and Larger: NEMA standard motor voltage 200 V, three phase, 60 Hz. 208 V, 208-230 V, 220 V, or 230 V motors are not acceptable.

D. Horsepower Capacity:

1. Each motor shall not be overloaded by the apparatus it operates under every condition of operation.

2. The horsepower capacity shall be the continuous rating based on the nameplate horsepower rating. (The motor may not be overloaded up to the horsepower obtained by multiplying the rated horsepower by the service factor shown on the nameplate).
3. Where a minimum horsepower capacity is listed, furnish a motor larger than the minimum, if required in a particular case.
4. Pay additional cost due to necessary increase in feeder sizes, circuit breaker sizes, etc.,

E. Bearings: Equip motors 1/2 hp and larger with ball bearings unless otherwise specified or indicated on the drawings.

F. Speed: As required and approved to meet the requirements of the service for which motors are intended.

G. Space Heaters: Where indicated, equip motors with space heaters and accessories to prevent condensation in the motor windings when motor is not operating.

H. Motor Winding Protection: Where indicated, equip motors with imbedded temperature measuring detectors in the windings (thermocouples or resistance thermometers) with control unit and accessories for direct reading of stator temperatures. Alarm shall sound and motor controller trip at temperature recommended by motor manufacturer.

I. Additional Requirements For Motors Used With Solid State and Adjustable Speed Motor Controllers:

1. Designed specifically for use with type of controller required.

J. Brake: Where indicated, equip motors with electro/mechanical brake system.

2.2 MANUAL AND MAGNETIC MOTOR CONTROLLERS

A. Minimum Size: The minimum allowable size of single or three phase magnetic motor controller is NEMA size 0.

B. Voltage Rating: To suit system voltage.

1. For single phase motor controllers which are not produced to suit the system voltage and phases, furnish properly rated 3 phase motor controllers and utilize required number of poles for the single phase circuit.

C. Enclosures:

1. NEMA Type: Unless otherwise indicated, furnish NEMA 1 enclosures.
2. Material: Steel construction unless otherwise indicated.
3. Type A, A1 and A2 Controllers Indicated To Be Flush Mounted: Furnish stainless steel face plates and galvanized steel recessed mounting boxes.

D. Control Power: Furnish fused secondary control power transformer (maximum control voltage 120 volts) mounted within each magnetic motor controller enclosure.

E. Local Control Devices:

1. Manual Motor Controllers:

    a. Type A1 Controller: In addition to the on/off switch function, furnish where indicated, a hand/auto switch or 3 position hand-off-auto switch mounted in the enclosure cover.

2. Magnetic Motor Controllers: Equip controllers with push buttons, or 3 position hand-off-auto selector switch, (to suit operation) mounted in the enclosure cover.

    a. For NEMA 1 enclosures furnish standard duty devices.
    b. For other NEMA enclosures furnish heavy duty devices to suit the requirements of the NEMA enclosure.

F. Pilot Lights:

1. Manual Motor Controllers: Equip controllers with pilot lights (neon) mounted in the enclosure cover.
2. Magnetic Motor Controllers: Equip controllers with pilot lights of the neon lamp type or transformer type, mounted in the enclosure cover.

G. Space Heaters: Equip magnetic motor controllers which are installed outdoors, and indoors in unheated locations, with space heaters and humidistat to prevent condensation within the housing.

H. Overload Devices: Equip motor controllers with manual reset melting type (eutectic), or manual reset bi-metallic type standard trip overload devices (NEMA Class 20, trips in 20 seconds or less when carrying a current equal to 600 percent of its current rating). Exceptions:

1. Equip motor controllers with automatic reset overload devices only where indicated.
2. Equip motor controllers with fast trip overload devices when recommended by equipment manufacturer (NEMA Class 10, trips in 10 seconds or less when carrying a current equal to 600 percent of its current rating).
3. Equip motor controllers with slow trip overload devices when recommended by equipment manufacturer (NEMA Class 30, trips in 30 seconds or less when carrying a current equal to 600 percent of its current rating).
4. Equip motor controllers with ambient compensated overload protection where motor and relay are not in the same ambient.
5. Equip motor controllers with solid state overload relays where indicated.

I. Manual Motor Controller Types:

1. Type A (Full Voltage, Non-Magnetic): Allen-Bradley Co.'s Bulletin 609, Cutler-Hammer Products' File A/B300-9115, Furnas Electric Co.'s Class 11, General Electric Co.'s CR-1062, Square D Co.'s Class 2510, Type M, or Westinghouse Electric Corp.'s Type B100.
2. Type A1 (Full Voltage, Non-Magnetic Single Phase): Allen-Bradley Co.'s Bulletin 600, Cutler-Hammer Products' File B200-9101, Furnas Electric Co.'s class 10, General Electric Co.'s CR-101, Square D Co.'s Class 2510, Type F, or Westinghouse Electric Corp.'s Type MS.
3. Type A2 (2 Speed, 2 Winding, Full Voltage, Non-Magnetic): Allen-Bradley Co.'s Bulletin 609TS, Cutler-Hammer Products' File A700, General Electric Co.'s CR-1062, or Square D Co.'s Class 2512, Type M.

4. Type A3 (2 Speed, 2 Winding, Full Voltage, Non-Magnetic, Single Phase): Allen-Bradley Co.'s Bulletin 600, Cutler-Hammer Products' File B200-9106, General Electric Co.'s CR-101, or Square D Co.'s Class 2512, Type F.

J. Magnetic Motor Controller Types:

1. Type B (Full Voltage Magnetic): Allen-Bradley Co.'s Bulletin 509, Cutler-Hammer Products' File A10-9586, Furnas Electric Co.'s Class 14, General Electric Co.'s CR-306, Square D Co.'s Class 8536, or Westinghouse Electric Corp.'s Class A200.
2. Type B-COM (Combination Full Voltage, Magnetic/Safety Switch): Allen-Bradley Co.'s Bulletin 512, Cutler-Hammer Products' File A30-9589, Furnas Electric Co.'s Class 17, General Electric Co.'s, CR-308, Square D Co.'s Class 8538, or Westinghouse Electric Corp.'s Class A203.
3. Type B2 (2 Speed, 2 Winding, Full Voltage, Magnetic): Allen-Bradley Co.'s Bulletin 530, Cutler-Hammer Products' File A700, Furnas Electric Co.'s Class 30, General Electric Co.'s CR-309, Square D Co.'s Class 8810, or Westinghouse Electric Corp.'s Class A900.
4. Type C (Automatic, Reduced Voltage Autotransformer, Magnetic): Allen-Bradley Co.'s Bulletin 570, Cutler-Hammer Products' File A400-9621, Furnas Electric Co.'s Class 36, General Electric Co.'s CR-331, Square D Co.'s, Class 8606, or Westinghouse Electric Corp.'s Class A600.
5. Type C-Com (Combination Automatic, Reduced Voltage Autotransformer, Magnetic/Safety Switch): Allen-Bradley Co.'s Bulletin 572, Cutler-Hammer Products' File A400-9621, Furnas Electric Co.'s Class 37, Square D Co.'s Class 8606, or Westinghouse Electric Corp.'s Class A603.
6. Type D (Part Winding, Magnetic): Allen-Bradley Co.'s Bulletin 530, Cutler-Hammer Products' File A460-9612, Furnas Electric Co.'s Class 36, General Electric Co.'s CR-330, Square D Co.'s Class 8640, or Westinghouse Electric Corp's Class A700.

K. Remote Control Stations:

1. Normal Duty: Start-Stop with pilot light unless otherwise indicated, in NEMA 1 enclosure; Allen-Bradley Co.'s Bulletin 800S, Cutler-Hammer Products' Bulletin 10250, Furnas Electric Co.'s Class 50, General Electric Co.'s CR-2943, Square D Co.'s Class 9001, or Westinghouse Electric Corp.'s Type PB1/PB2.
2. Heavy Duty: Start-Stop with pilot light unless otherwise indicated, in NEMA enclosure to suit conditions; Allen-Bradley Co.'s Bulletin 800T, Cutler-Hammer Products' 10250T, Furnas Electric Co.'s Class 52, General Electric Co.'s CR104P, Square D Co.'s Class 9001, or Westinghouse Electric Corp.'s Type PB1/PB2.

2.3 ADJUSTABLE SPEED MOTOR CONTROLLERS

A. Type AS-PWM for Motor: Microprocessor based, sine-coded pulse-width-modulation design variable frequency/variable voltage adjustable speed motor controller:

1. Companies and Models: Furnish the Company's model which meets the requirements of the motor and driven equipment combination, suits the electrical system parameters, and accommodates the operating features and accessories:

a. Allen-Bradley Co. Inc.'s 1333 (3/4-50 hp/230 V, 1-5 hp/460 V), 1336 (1-100 hp/230 V, 1-500 hp/460 V), 1352 (25-1400 hp/460 V).
b. Asea Brown Boveri's ACH500 (2-25 hp/230 V, 3-400 hp/460 V), ACS 200 (2-3 hp/230 V, 1-5 hp/460 V), SAMI STAR 30-1300 hp/460 V).
c. Eaton Corp.'s AF-1500 (1-20 hp/230 V, 1-30 hp/460 V, IS5000+ (5-600 hp/460 V).
d. Furnas Electric Co.'s Micro 7000 (2-25 hp/230 V, 2-60 hp/460 V), Super 7000+ (75-200 hp/460 V).
e. General Electric Co.'s AF-300B (3/4-30 hp/230 V, 1/4-300 hp/460 V).
f. Reliance Electric Co.'s GP2000 (1/4-50 hp/230 V, 1/4-100 hp/460 V).
g. Southcon Industrial Controls Inc.'s Magnum PWM (1/4-200 hp/230 V, 1/4 to 400 hp/460 V).
h. Square D Co.'s Class 8804 Omegapak (1-150 hp/230 V, 1-300 hp/460 V).
i. Westinghouse Electric Corp.'s Accutrol 110 (1-75 hp/230 V, 2-20 hp/460 V).

2. Operating Features And Accessories:

a. Suitable for variable torque load.
b. Soft start: Adjustable time range of 2 to 600 seconds.

1) Heavy duty dynamic braking which directs the regenerative energy from the motor into a resistor.

c. DC injection braking to bring motor to stop.
d. Provision to energize electro/Mechanical brake to hold the driven equipment stopped, after the motor has stopped.
e. Ground fault protection.
f. Ambient operating temperature range 0 to 40 degrees C. Maximum humidity 95 percent.
g. Digital display showing operational functions:

1) Speed.
2) Output voltage.
3) Output current.
4) Elapsed time.

h. Digital display, or LED's showing diagnostic functions, including:

1) Overcurrent.
2) Overvoltage.
3) Undervoltage.
4) Overtemperature.
5) Ground fault.
6) Overload.

i. Fault alarm contact for remote alarm to Building management system BMS..
j. Suitable for use on circuit capable of delivering 22,000 amps RMS short circuit fault current.
k. Input voltage: Suitable for use on 208 V ac 3 phase circuit.
l. Output voltage 0 to 208 V ac, 3 phase.
m. Frequency:

1) Input: 60 Hz.
2) Selectable Output: 3 to 60 Hz, with separately adjustable min/max frequency limits and capability to lock these limits so that they cannot be exceeded.
3) Output regulation: + .06 percent.

n. 100 percent continuous current rating, 150 percent for one minute every 10 minutes.
o. Local control panel for manual operation:
1) Hand-Automatic selector switch, and start-stop pushbuttons.
2) Manual speed potentiometer.
3) Power on light.
4) Run light.

p. Local programming panel for:

1) Acceleration rate.
2) Deceleration rate.
3) Start torque (boost).
4) Maximum frequency.
5) Volts/Hz pattern.
6) Restart Mode: Manual reset/restart upon return of input power or overload.
7) Start and direction, local or remote.
8) Stop mode, ramp or coast.

q. Interface Input For Automatic Speed Control: Isolated, direct proportional automatic speed follower which responds to an externally supplied signal from the speed reference signal source for automatic motor speed control when the controller is in the automatic mode of operation.

1) 0-10 V dc.
2) 4-20mA dc.
3) Variable resistance.
4) 3 to 15 psi pneumatic/electric transducer.
r. Interface Input For Emergency Stop: Isolated input to receive signal from the fire alarm system, to stop motor upon alarm condition.
s. Interface Output To Indicate Speed: Interface which follows motor speed, enabling the motor speed to be displayed at the Direct Digital Building Control System primary operator station.
t. Start/stop control voltage maximum 120 V, 3 wire.
u. Auxiliary output contacts, 120 V ac, 1 amp:

1) Spares, for future use: 1 N.O., 1 N.C.
2) For Remote Indication at the Direct Digital Building Control System Primary Operation Station:

a) Run: 1 N.O.
b) Fault: 1 N.O., 1 N.C.
c) At Speed: 1 N.O.

v. Electronic overload device that monitors the motor function to provide motor overload protection at all speeds. Manual or automatic reset as specified under local programming panel.

1) NEMA 3R enclosure.

w. Input fusible disconnect switch with external operator.

x. Controllers designed, equipped, and installed such that the controllers reflect 5 percent or less total harmonic distortion at the source specified under System Acceptance Test. Equip controller with:

1) Input isolation/voltage matching transformer, or 3 percent input line reactor if voltage matching is not required.
2) Transient protective devices on input terminals; Innovative Technology Inc.'s P-Plus Protector.
3) Additional equipment (line filters, etc.) as recommended by the adjustable speed motor controller manufacturer to maintain total harmonic distortion below specified level.

y. Automatic bypass switch to automatically switch to full speed across the line operation upon drive fault (except short circuit, ground fault, or motor thermal overload).

1) Solid state, soft start, or reduced voltage magnetic motor controller arranged and wired to operate motor when switch is in bypass mode. Across-the-line magnetic motor controller may be used for motors less than 7-1/2 hp (208 V), 15 hp (480 V).

z. Interlock system to prevent the load side disconnect switch (at the motor) from being opened while the adjustable speed motor controller is energized. Motor controller input disconnect must be opened before load side disconnect switch can be opened. Coordinate interlock system with Electrical Work Contractor.

aa. Provide additional operating features and accessories as required by the manufacturer of the equipment which the adjustable speed motor controller is driving.

2.4 HARMONICS METER

A. Dranetz-BMI's 155 Harmonics Meter with capability for measuring amperage harmonics, 1000 New Durham Road, Edison, NJ 08818-4019, (800) 372-6832, or (732) 287-3680; Fax: (732) 248-1834.

2.5 NAMEPLATES

A. General: Precision engrave letters and numbers with uniform margins, character size minimum 3/16 inch high.

1. Phenolic: Two color laminated engraver's stock, 1/16 inch minimum thickness, machine engraved to expose inner core color (white).
2. Aluminum: Standard aluminum alloy plate stock, minimum .032 inches thick, engraved areas enamel filled or background enameled with natural aluminum engraved characters.

3. Materials for Outdoor Applications: As recommended by nameplate manufacturer to suit environmental conditions.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install the Work of this Section in accordance with the manufacturer's printed instructions.

B. Nameplates: Identify each remote control station, indicating motor controlled. Identify each interlock switch, indicating purpose of switch:

1. NEMA 1 Enclosures: Rivet or bolt nameplate to the cover.
2. NEMA 12 Enclosures: Rivet or bolt and gasket nameplate to the cover.
3. NEMA 3R, 4, 4X, 7, or 9 Enclosures: Attach nameplates to the cover using adhesive specifically designed for the purpose, or mount nameplate on wall or other conspicuous location adjacent to switch. Do not penetrate enclosure with fasteners.

PART 4 - REMOTE CONTROL STATION SCHEDULE

A. Use normal duty remote control stations in dry non-hazardous locations. Use heavy duty remote control stations in all other locations.

4.2 FIELD QUALITY CONTROL

A. Preliminary System Test:

1. Preparation: Have the Company Field Advisor program and adjust the completed solid state and adjustable speed motor controllers and then operate them long enough to assure that they are performing properly.
2. Run a preliminary test for the purpose of:

a. Determining whether motor controllers are in a suitable condition to conduct an acceptance test.
b. Checking instruments and equipment.
c. Training facility personnel.

B. System Acceptance Test:

1. Preparation: Notify the Director's Representative at least 3 working days prior to the test so arrangements can be made prior to the test to have a Facility Representative witness the test.
2. Make the following tests:

a. Demonstrate that each solid state and adjustable speed motor controller performs its intended function.

b. Use the harmonics meter to determine the total harmonic distortion caused by the adjustable speed motor controllers.

1) While the motors are running, measure the total harmonic distortion at the transformer serving the building.
2) If total harmonic distortion caused by the adjustable speed motor controllers exceeds specified limit, install additional equipment as necessary to keep the total harmonic distortion caused by the adjustable speed motor controllers under the specified limit.

3. Supply all equipment necessary for system adjustment and testing.

1) Submit written report of test results signed by the Company Field Advisor and the Director's Representative. Mount a copy of the final report in a plexiglass enclosed frame assembly in a conspicuous location on or adjacent to each motor controller.

4.3 MOTOR CONTROLLER SCHEDULE

A. Types of Motor Controllers Required For Single Speed Motors, Unless Indicated Otherwise On Drawings:

1. 120/208 V, Three Phase, 4W, Premises Wiring System:

a. Single Phase Motor Less Than 1 hp - Manually Operated: Type A or Type A1.
b. Single Phase Motors Less Than 1 hp - Automatically Operated: Type B. Exception: Type A or Type A1 may be used for motors less than 1/2 hp when the automatic auxiliary controlling device (thermostat, pressure switch, etc.) is rated for the voltage and current requirements of the motor.
c. Three Phase Squirrel Cage Motors Less Than 7-1/2 hp - Manually or Automatically Operated: Type B-COM (B when indicated on drawing) or Type SS.
d. Three Phase Squirrel Cage Motors 7-1/2 hp and Larger - Manually or Automatically Operated: Type C-COM (C when indicated on drawings) or Type SS.
e. Three Phase Hermetically Sealed Compressor Motors Less Than 7-1/2 hp - Automatically Operated: Type B or Type SS.
f. Three Phase Hermetically Sealed Compressor Motors 7-1/2 hp and Larger - Automatically Operated: Type D or Type SS.

B. Types of Motor Controllers Required For 2 Speed Motors, Unless Indicated Otherwise on Drawings:

1. 120/208 V, Three Phase, 4W, Premises Wiring System:

a. Single Phase Motors Less Than 1 hp - Manually Operated: Type A2. Exception: Type A3 may be used for motors 1/2 hp or less.
b. Single Phase Motors Less Than 1 hp - Automatically Operated: Type B2.
c. Three Phase Squirrel Cage Motors Less Than 7-1/2 hp - Manually or Automatically Operated: Type B2 or Type SS.
d. Three Phase Squirrel Cage Motors 7-1/2 hp and Larger: Type SS.

C. Types of Motor Controllers Required For Variable Speed Applications:

1. Three Phase Premises Wiring System:

a. Three Phase Motors 1 to 800 hp: Type AS-PMW.

END OF SECTION 260221

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Copper building wire.
2. Metal-clad cable, Type MC.
3. Fire-alarm wire and cable.
4. Connectors and splices.

1.3 DEFINITIONS

A. RoHS: Restriction of Hazardous Substances.

B. VFC: Variable-frequency controller.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

E. Product Schedule: Indicate type, use, location, and termination locations.

F. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

G. Qualification Data: For manufacturer's authorized service representative.

H. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: Member company of NETA.

1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

B. Qualifications: The persons performing the Work of this Section and their supervisor shall be personally experienced in electrical work and shall have been regularly performing such work for a minimum of 3 years.

C. UL Listing: Equipment and materials for which Underwriters' Laboratories, Inc. (UL) provides product listing service shall be listed and bear the listing mark.

D. Underwriter's Certificate: A New York Board of Fire Underwriters inspection or certificate is not required.

E. Equipment Qualifications For Products Other Than Those Specified:

1. At the time of submission provide written notice to the Director of the intent to propose an "or equal" for products other than those specified. Make the "or equal" submission in a timely manner to allow the Director sufficient time to review the proposed product, perform inspections and witness test demonstrations.
2. If products other than those specified are proposed for use furnish the name, address, and telephone numbers of at least 5 comparable installations that can prove the proposed products have performed satisfactorily for 3 years. Certify in writing that the Director's Representative owners of the 5 comparable installations will allow inspection of their installation by the Director's Representative and the Company Field Advisor.

a. Make arrangements with the Director's Representative owners of 2 installations (selected by the Director) for inspection of the installations by the Director's Representative. Also obtain the services of the Company Field Advisor for the proposed products to be present. Notify the Director a minimum of 3 weeks prior to the availability of the installations for the inspection, and provide at least one alternative date for each inspection.
b. Only references from the actual Director's Representative owner or Director's Representative owner's representative (Security Supervisor, Maintenance Supervisor, etc.) will be accepted. References from dealers, system installers or others, who are not the actual Director's Representative owners of the proposed products, are not acceptable.

1) Verify the accuracy of all references submitted prior to submission and certify in writing that the accuracy of the information has been confirmed.

3. The product manufacturer shall have test facilities available that can demonstrate that the proposed products meet the contract requirements.

a. Make arrangements with the test facility for the Director's Representative to witness test demonstrations. Also obtain the services of the Company Field Advisor for the proposed product to be present at the test facility. Notify the Director a minimum of 3 weeks prior to the availability of the test facility, and provide at least one alternative date for the testing.

4. Provide written certification from the manufacturer that the proposed products are compatible for use with all other equipment proposed for use for this system and meet all contract requirements.

F. Company Field Advisor: Secure the services of the cable manufacturer's Company Field Advisor for a minimum of 4 working hours at the contract site for the following:

1. Witness installation of at least one splice and termination by each person who will be doing the actual cable splice and termination.
2. Certify with an affidavit that the aforementioned particulars are satisfactory and the cable is installed in accordance with cable manufacturer's recommendations.

PART 2 - PRODUCTS

2.1 COPPER BUILDING WIRE

A. Description: Flexible, insulated, and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Cerro Wire LLC.
2. General Cable Technologies Corporation.
3. Southwire Company.
4. Or equal.

C. Standards:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
2. RoHS compliant.
3. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

D. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.

E. Conductor Insulation:

1. Type RHH and Type RHW-2: Comply with UL 44.
2. Type USE-2and Type SE: Comply with UL 854.
3. Type THHN and Type THWN-2: Comply with UL 83.
4. Type XHHW-2: Comply with UL 44.

F. Shield:

1. Type TC-ER: Cable designed for use with VFCs, with oversized crosslinked polyethylene insulation, spiral-wrapped foil plus 85 percent coverage braided shields and insulated full-size ground wire [, and sunlight- and oil-resistant outer PVC jacket.

2.2 METAL-CLAD CABLE, TYPE MC

A. Description: A factory assembly of one or more current-carrying insulated conductors in an overall metallic sheath.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Atkore International (AFC Cable Systems).
2. General Cable Technologies Corporation.
3. Southwire Company.
4. Or equal.

C. Standards:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
2. Comply with UL 1569.
3. RoHS compliant.
4. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

D. Circuits:

1. Single circuit and multicircuit with color-coded conductors. Provide single circuit MC for dedicated equipment branch circuits. Provide multicircuit MC for work station branch circuits, offices, and other areas with multiple circuits originating from the same receptacle panel.
2. Power-Limited Fire-Alarm Circuits: Comply with UL 1424.

E. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors:

1. Ground Conductor: Insulated.

F. Conductor Insulation:

1. Type TFN/THHN/THWN-2: Comply with UL 83.
2. Type XHHW-2: Comply with UL 44.

G. Armor: Aluminum**,** interlocked.

H. Jacket: PVC applied over armor.

2.3 TRAY CABLE, TYPE TC

A. Description: A factory assembly of insulated current-carrying conductors with or without an equipment grounding conductor in a nonmetallic jacket.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. General Cable Technologies Corporation.
2. Service Wire Co.
3. Southwire Company.
4. Or equal.

C. Standards:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
2. RoHS compliant.
3. Comply with UL 1277.
4. Comply with ICEA S-73-532/NEMA WC 57 for Type TC cables used for control, thermocouple extension, and instrumentation.
5. Comply with ICEA S-95-658/NEMA WC 70 for Type TC cables used for power distribution.
6. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

D. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors

E. Ground Conductor: Insulated.

F. Conductor Insulation: Type XHHW-2. Comply with UL 44.

G. Shield: Metallic.

2.4 CONNECTORS AND SPLICES

A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. 3M Electrical Products.
2. Appleton - O-Z/Gedney; Emerson Electric Co., Automation Solutions.
3. Ideal Industries, Inc.
4. Or equal.

C. Jacketed Cable Connectors: For steel and aluminum jacketed cables, zinc die-cast with set screws, designed to connect conductors specified in this Section.

D. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.

1. Material: Copper.
2. Type: Two-hole with long barrels.
3. Termination: Compression.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders:

1. Copper; solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Branch Circuits:

1. Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

C. VFC Output Circuits Cable: Extra-flexible stranded for all sizes.

D. Power-Limited Fire Alarm and Control: Solid for No. 12 AWG and smaller.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Service Entrance: Type USE, single conductor in raceway.

B. Exposed Feeders: Type THHN/THWN-2, single conductors in raceway.

C. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspaces: Metal-clad cable, Type MC**.** Coordinate "Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground" paragraph below with Section 260543 "Underground Ducts and Raceways for Electrical Systems."

D. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN/THWN-2, single conductors in raceway

E. Feeders Installed below Raised Flooring: Type THHN/THWN-2, single conductors in raceway.

F. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Metal-clad cable, Type MC

G. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN/THWN-2, single conductors in raceway.

H. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless steel, wire-mesh, strain relief device at terminations to suit application.

I. VFC Output Circuits: Type TC-ER cable with braided shield.

3.3 INSTALLATION, GENERAL

A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.

B. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.

C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

3.4 INSTALLATION OF FIRE-ALARM WIRE AND CABLE

A. Reference the following specifications for additional fire alarm wiring information:

1. 260523 - Control voltage electrical power cables.
2. 283101 – Protected premises fire alarm systems.

B. Comply with NECA 1 and NFPA 72.

1. Install plenum cable in environmental airspaces, including plenum ceilings.
2. Fire-alarm circuits and equipment control wiring associated with fire-alarm system shall be installed in a dedicated pathway system.

    a. Cables and pathways used for fire-alarm circuits, and equipment control wiring associated with fire-alarm system, may not contain any other wire or cable.

3. Fire-Rated Cables: Use of two-hour, fire-rated fire-alarm cables, NFPA 70, Types MI and CI, is permitted.
4. Signaling Line Circuits: Power-limited fire-alarm cables maybe installed in the same cable or pathway as signaling line circuits.

C. Wiring within Enclosures: Separate power-limited and non-power-limited conductors as recommended by manufacturer. Install conductors parallel with or at right angles to sides and back of the enclosure. Bundle, lace, and train conductors to terminal points with no excess. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with fire-alarm system to terminal blocks. Mark each terminal according to system's wiring diagrams. Make all connections with approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.

D. Cable Taps: Use numbered terminal strips in junction, pull, and outlet boxes; cabinets; or equipment enclosures where circuit connections are made.

E. Color-Coding: Color-code fire-alarm conductors differently from the normal building power wiring. Use one color-code for alarm circuit wiring and another for supervisory circuits. Color-code audible alarm-indicating circuits differently from alarm-initiating circuits. Use different colors for visible alarm-indicating devices. Paint fire-alarm system junction boxes and covers red.

F. Risers: Install at least two vertical cable risers to serve the fire-alarm system. Separate risers in close proximity to each other with a minimum one-hour-rated wall, so the loss of one riser does not prevent receipt or transmission of signals from other floors or zones.

G. Wiring to Remote Alarm Transmitting Device: 1-inch (25-mm) conduit between the fire-alarm control panel and the transmitter. Install number of conductors and electrical supervision for connecting wiring as needed to suit monitoring function.

H. Where fire alarm cables are installed below 7’0” above finished floor or where installed exposed in areas susceptible to physical damage, cables shall be installed in conduit/raceway as per NFPA 70, section 760.

3.5 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

C. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches of slack.

3.6 IDENTIFICATION

A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

3.7 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.8 FIELD QUALITY CONTROL

A. Administrant for Tests and Inspections:

1. Director's Representative will engage qualified testing agency to administer and perform tests and inspections.
2. Engage qualified testing agency to administer and perform tests and inspections.
3. Engage factory-authorized service representative, Company Service Advisor to administer and perform tests and inspections on components, assemblies, and equipment installations, including connections.
4. Administer and perform tests and inspections with the assistance of Company Service factory-authorized service representative.

B. Tests and Inspections:

1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.
2. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors and conductors feeding the following critical equipment and services for compliance with requirements:

    a. Feeder to panel LPP.

    b. Feeder to panel LLP.

    c. Feeder to Panel LMP.

    d. Feeder to Panel ULP.

    e. Feeder to Panel UPP.

    f. Elevator feeder.

3. Perform each of the following visual and electrical tests:

    a. Inspect exposed sections of conductor and cable for physical damage and correct connection according to the single-line diagram.
    b. Test bolted connections for high resistance using one of the following:

        1) A low-resistance ohmmeter.
        2) Calibrated torque wrench.
        3) Thermographic survey.

    c. Inspect compression-applied connectors for correct cable match and indentation.
    d. Inspect for correct identification.
    e. Inspect cable jacket and condition.
    f. Insulation-resistance test on each conductor for ground and adjacent conductors. Apply a potential of 500-V dc for 300-V rated cable and 1000-V dc for 600-V rated cable for a one-minute duration.
    g. Continuity test on each conductor and cable.
    h. Uniform resistance of parallel conductors.

C. Cables will be considered defective if they do not pass tests and inspections.

D. Prepare test and inspection reports to record the following:

1. Procedures used.
2. Results that comply with requirements.
3. Results that do not comply with requirements, and corrective action taken to achieve compliance with requirements.

END OF SECTION 260519

SECTION 260523 - CONTROL-VOLTAGE ELECTRICAL POWER CABLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Backboards.
2. Category 5e balanced twisted pair cable.
3. Category 6 balanced twisted pair cable.
4. Category 6a balanced twisted pair cable.
5. Balanced twisted pair cabling hardware.
6. RS-485 cabling.
7. Low-voltage control cabling.
8. Control-circuit conductors.
9. Identification products.

1.2 DEFINITIONS

A. EMI: Electromagnetic interference.

B. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control and signaling power-limited circuits.

C. Plenum: A space forming part of the air distribution system to which one or more air ducts are connected. An air duct is a passageway, other than a plenum, for transporting air to or from heating, ventilating, or air-conditioning equipment.

D. RCDD: Registered Communications Distribution Designer.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

E. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

F. Qualification Data: For testing agency, RCDD, layout technician, installation supervisor, and field inspector.

G. Source quality-control reports.

H. Field quality-control reports.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: Accredited by NETA.

1. Testing Agency's Field Supervisor: Currently certified by BICSI as an RCDD to supervise on-site testing.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Flame Travel and Smoke Density in Plenums: As determined by testing identical products according to NFPA 262, by a qualified testing agency. Identify products for installation in plenums with appropriate markings of applicable testing agency.

1. Flame Travel Distance: 60 inches or less.
2. Peak Optical Smoke Density: 0.5 or less.
3. Average Optical Smoke Density: 0.15 or less.

C. Flame Travel and Smoke Density for Riser Cables in Non-Plenum Building Spaces: As determined by testing identical products according to UL 1666.

D. Flame Travel and Smoke Density for Cables in Non-Riser Applications and Non-Plenum Building Spaces: As determined by testing identical products according to UL 1685.

E. RoHS compliant.

2.2 BACKBOARDS

A. Description: Plywood, fire-retardant treated**,** 3/4 by 48 by 96 inches

B. Painting: Paint plywood on all sides and edges with flat paint.

2.3 CATEGORY 5e BALANCED TWISTED PAIR CABLE

A. Description: Four-pair, balanced-twisted pair cable, certified to meet transmission characteristics of Category 5e cable at frequencies up to 100 MHz.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Belden Inc.
2. CommScope, Inc.
3. General Cable; Prysmian Group North America.
4. Or equal.

C. Standard: Comply with ICEA S-90-661, NEMA WC 63.1, and TIA-568-C.2 for Category 5e cables.

D. Conductors: 100-ohm, 24 AWG solid copper.

E. Shielding/Screening: Shielded twisted pairs (FTP).

F. Cable Rating: Plenum.

G. Jacket: White thermoplastic.

2.4 CATEGORY 6 BALANCED TWISTED PAIR CABLE

A. Description: Four-pair, balanced-twisted pair cable, with internal spline**,** certified to meet transmission characteristics of Category 6 cable at frequencies up to 250MHz.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Belden CDT Networking Division/NORDX.
2. CommScope, Inc.
3. General Cable; Prysmian Group North America.
4. Or equal.

C. Standard: Comply with NEMA WC 66/ICEA S-116-732 and TIA-568-C.2 for Category 6 cables.

D. Conductors: 100-ohm, 23 AWG solid copper.

E. Shielding/Screening: Shielded twisted pairs (FTP).

F. Cable Rating: Plenum.

G. Jacket: Blue thermoplastic.

2.5 CATEGORY 6a BALANCED TWISTED PAIR CABLE

A. Description: Four-pair, balanced-twisted pair cable, with internal spline**,** certified to meet transmission characteristics of Category 6a cable at frequencies up to 500MHz.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Belden CDT Networking Division/NORDX.
2. CommScope, Inc.
3. General Cable; Prysmian Group North America.
4. Or equal.

C. Standard: Comply with TIA-568-C.2 for Category 6a cables.

D. Conductors: 100-ohm, 23 AWG solid copper.

E. Shielding/Screening: Shielded twisted pairs (FTP).

F. Cable Rating: Plenum.

G. Jacket: Blue thermoplastic.

2.6 BALANCED TWISTED PAIR CABLE HARDWARE

A. Description: Hardware designed to connect, splice, and terminate balanced twisted pair copper communications cable.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Belden CDT Networking Division/NORDX.
2. General Cable; Prysmian Group North America.
3. Leviton Manufacturing Co., Inc.
4. Or equal.

C. General Requirements for Balanced Twisted Pair Cable Hardware:

1. Comply with the performance requirements of Category 6a.
2. Comply with TIA-568-C.2, IDC type, with modules designed for punch-down caps or tools.
3. Cables shall be terminated with connecting hardware of same category or higher.

D. Source Limitations: Obtain balanced twisted pair cable hardware from same manufacturer as balanced twisted pair cable, from single source..

E. Connecting Blocks: 110-style IDC for Category 6. Provide blocks for the number of cables terminated on the block, plus 25 percent spare, integral with connector bodies, including plugs and jacks where indicated.

F. Cross-Connect: Modular array of connecting blocks arranged to terminate building cables and permit interconnection between cables.

1. Number of Terminals per Field: One for each conductor in assigned cables.

G. Patch Panel: Modular panels housing numbered jack units with IDC-type connectors at each jack location for permanent termination of pair groups of installed cables.

1. Features:

a. Universal T568A and T568B wiring labels.
b. Labeling areas adjacent to conductors.
c. Replaceable connectors.
d. 24 or 48 ports.

2. Construction: 16-gauge steel and mountable on 19-inch equipment racks.
3. Number of Jacks per Field: One for each four-pair cable indicated.

H. Patch Cords: Factory-made, four-pair cables in 48-inch lengths; terminated with an eight-position modular plug at each end.

1. Patch cords shall have bend-relief-compliant boots and color-coded icons to ensure performance. Patch cords shall have latch guards to protect against snagging.

I. Plugs and Plug Assemblies:

1. Male; eight position; color-coded modular telecommunications connector designed for termination of a single four-pair 100-ohm unshielded or shielded balanced twisted pair cable.
2. Comply with IEC 60603-7-1, IEC 60603-7-2, IEC 60603-7-3, IEC 60603-7-4, and IEC 60603-7.5.
3. Marked to indicate transmission performance.

J. Jacks and Jack Assemblies:

1. Female; eight position; modular; fixed telecommunications connector designed for termination of a single four-pair 100-ohm unshielded or shielded balanced twisted pair cable.
2. Designed to snap-in to a patch panel or faceplate.
3. Standards:

a. Category 5e, unshielded balanced twisted pair cable shall comply with IEC 60603-7-2.
b. Category 5e, shielded balanced twisted pair cable shall comply with IEC 60603-7-3.
c. Category 6, unshielded balanced twisted pair cable shall comply with IEC 60603-7-4.
d. Category 6, shielded balanced twisted pair cable shall comply with IEC 60603-7.5.
e. Category 6a, unshielded balanced twisted pair cable shall comply with IEC 60603-7-41.

f. Category 6a, shielded balanced twisted pair cable shall comply with IEC 60603-7.51.

K. Faceplate:

1. Two port, vertical single-gang faceplates designed to mount to single-gang wall boxes.
2. Plastic Faceplate: High-impact plastic. Coordinate color with Section 262726 "Wiring Devices."
3. Metal Faceplate: Stainless steel , complying with requirements in Section 262726 "Wiring Devices."
4. For use with snap-in jacks accommodating any combination of balanced twisted pair, optical fiber, and coaxial work area cords.

a. Flush mounting jacks, positioning the cord at a 45-degree angle.

L. Legend:

1. Machine printed, in the field, using adhesive-tape label.
2. Snap-in, clear-label covers and machine-printed paper inserts.

2.7 TWIN-AXIAL DATA HIGHWAY CABLE

A. Standard Cable: NFPA 70, Type CM.

1. Paired, **2** pairs, No. 20 AWG, stranded (7x28) tinned-copper conductors.
2. Polypropylene insulation.
3. Individual aluminum foil-polyester tape shielded pairs with 100 percent shield coverage.
4. PVC jacket.
5. Pairs are cabled on common axis with No. 24 AWG, stranded (7x32) tinned-copper drain wire.
6. Flame Resistance: Comply with UL 1685.

B. Plenum-Rated Cable: NFPA 70, Type CMP.

1. Paired, 2 pairs, No. 20 AWG, stranded (7x28) tinned-copper conductors.
2. Plastic insulation.
3. Individual aluminum foil-polyester tape shielded pairs with 100 percent shield coverage.
4. Plastic jacket.
5. Pairs are cabled on common axis with No. 24 AWG, stranded (7x32) tinned-copper drain wire.
6. Flame Resistance: Comply with NFPA 262.

2.8 RS-232 CABLE

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Belden Inc.
2. General Cable; Prysmian Group North America.

3. Southwire Company.
4. Or equal.

B. PVC-Jacketed, TIA 232-F:

1. Nine, No. 22 AWG, stranded (7x30) tinned copper conductors.
2. Polypropylene insulation.
3. Aluminum foil-polyester tape shield with 100 percent shield coverage.
4. PVC jacket.
5. Conductors are cabled on common axis with No. 24 AWG, stranded (7x32) tinned copper drain wire.
6. NFPA 70 Type: Type CM.
7. Flame Resistance: Comply with UL 1581.

C. Plenum-Type, TIA 232-F:

1. Nine, No. 22 AWG, stranded (7x30) tinned copper conductors.
2. PE insulation.
3. Aluminum foil-polyester tape shield with 100 percent shield coverage.
4. Fluorinated ethylene propylene jacket.
5. Conductors are cabled on common axis with No. 24 AWG, stranded (7x32) tinned copper drain wire.
6. Flame Resistance: Comply with NFPA 262.

2.9 RS-485 CABLE

A. Standard Cable: NFPA 70, Type CMG.

1. Paired, two pairs, twisted, No. 22 AWG, stranded (7x30) tinned-copper conductors.
2. PVC insulation.
3. Unshielded.
4. PVC jacket.
5. Flame Resistance: Comply with UL 1685.

B. Plenum-Rated Cable: NFPA 70, Type CMP.

1. Paired, pairs, No. 22 AWG, stranded (7x30) tinned-copper conductors.
2. Fluorinated ethylene propylene insulation.
3. Unshielded.
4. Fluorinated ethylene propylene jacket.
5. Flame Resistance: NFPA 262.

2.10 LOW-VOLTAGE CONTROL CABLE

A. Paired Cable: NFPA 70, Type CMG.

1. Multi-pair, twisted, No. 16 AWG, stranded (19x29) tinned-copper conductors.
2. PVC insulation.
3. Unshielded.

4. PVC jacket.
5. Flame Resistance: Comply with UL 1685.

B. Plenum-Rated, Paired Cable: NFPA 70, Type CMP.

1. Multi-pair, twisted, No. 16 AWG, stranded (19x29) tinned-copper conductors.
2. PVC insulation.
3. Unshielded.
4. PVC jacket.
5. Flame Resistance: Comply with NFPA 262.

2.11 CONTROL-CIRCUIT CONDUCTORS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. General Cable; Prysmian Group North America.
2. Service Wire Co.
3. Southwire Company.
4. Or equal.

B. Class 1 Control Circuits: Stranded copper, Type THHN/THWN-2, complying with UL 83 in raceway.

C. Class 2 Control Circuits: Stranded copper, power-limited cable, concealed in building finishes.

D. Class 3 Remote-Control and Signal Circuits: Stranded copper, Type TW or Type TF, complying with UL 83, in raceway.

E. Class 2 Control Circuits and Class 3 Remote-Control and Signal Circuits That Supply Critical Circuits: Circuit Integrity (CI) cable.

1. Smoke control signaling and control circuits.

2.12 FIRE-ALARM WIRE AND CABLE

A. Reference the following specifications for additional fire alarm wiring information:

1. 260523 - Control voltage electrical power cables.
2. 283101 – Protected premises fire alarm systems.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Allied Wire & Cable Inc.
2. CommScope, Inc.
3. West Penn Wire.
4. Or equal.

C. General Wire and Cable Requirements: NRTL listed and labeled as complying with NFPA 70, Article 760.

D. Signaling Line Circuits: Twisted, shielded pair, size as recommended by system manufacturer.

1. Circuit Integrity Cable: Twisted shielded pair, NFPA 70, Article 760, Classification CI, for power-limited fire-alarm signal service Type FPL. NRTL listed and labeled as complying with UL 1424 and UL 2196 for a two-hour rating.

E. Non-Power-Limited Circuits: Solid-copper conductors with 600-V rated, 75 deg C, color-coded insulation, and complying with requirements in UL 2196 for a two-hour rating.

1. Low-Voltage Circuits: No. 16 AWG, minimum, in pathway.
2. Line-Voltage Circuits: No. 12 AWG, minimum, in pathway.
3. Multiconductor Armored Cable: NFPA 70, Type MC, copper conductors, Type TFN/THHN conductor insulation, copper drain wire, copper armor with outer jacket with red identifier stripe, NTRL listed for fire-alarm and cable tray installation, plenum rated.

F. Where fire alarm cables are installed below 7’0” above finished floor or where installed exposed in areas susceptible to physical damage, cables shall be installed in conduit/raceway as per NFPA 70, section 760.

2.13 SOURCE QUALITY CONTROL

A. Testing Agency: Director’s Representative will engage a qualified testing agency to evaluate cables.

B. Factory test twisted pair cables according to TIA-568-C.2.

C. Cable will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Test cables on receipt at Project site.

1. Test each pair of twisted pair cable for open and short circuits.

3.2 INSTALLATION OF RACEWAYS AND BOXES

1. Outlet boxes shall be no smaller than 2 inches wide, 3 inches high, and 2-1/2 inches deep.

2. deep with extension ring sized to bring edge of ring to within 1/8 inch of the finished wall surface.
3. Flexible metal conduit shall not be used.

B. Comply with TIA-569-D for pull-box sizing and length of conduit and number of bends between pull points.

C. Install manufactured conduit sweeps and long-radius elbows if possible.

D. Raceway Installation in Equipment Rooms:

1. Position conduit ends adjacent to a corner on backboard if a single piece of plywood is installed, or in the corner of the room if multiple sheets of plywood are installed around perimeter walls of the room.
2. Install cable trays to route cables if conduits cannot be located in these positions.
3. Secure conduits to backboard if entering the room from overhead.
4. Extend conduits 3 inches above finished floor.
5. Install metal conduits with grounding bushings and connect with grounding conductor to grounding system.

E. Backboards: Install backboards with 96-inch dimension vertical. Butt adjacent sheets tightly and form smooth gap-free corners and joints.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

A. Comply with NECA 1.

B. General Requirements for Cabling:

1. Comply with TIA-568-C Series of standards.
2. Comply with BICSI ITSIMM, Ch. 5, "Copper Structured Cabling Systems."
3. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, and cross-connect and patch panels.
4. Cables may not be spliced and shall be continuous from terminal to terminal. Do not splice cable between termination, tap, or junction points.
5. Cables serving a common system may be grouped in a common raceway. Install network cabling and control wiring and cable in separate raceway from power wiring. Do not group conductors from different systems or different voltages.
6. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
7. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIMM, Ch. 5, "Copper Structured Cabling Systems." Install lacing bars and distribution spools.
8. Do not install bruised, kinked, scored, deformed, or abraded cable. Remove and discard cable if damaged during installation and replace it with new cable.
9. Cold-Weather Installation: Bring cable to room temperature before dereeling. Do not use heat lamps for heating.
10. Pulling Cable: Comply with BICSI ITSIMM, Ch. 5, "Copper Structured Cabling Systems." Monitor cable pull tensions.
11. Support: Do not allow cables to lie on removable ceiling tiles.

12. Secure: Fasten securely in place with hardware specifically designed and installed so as to not damage cables.
13. Provide strain relief.
14. Keep runs short. Allow extra length for connecting to terminals. Do not bend cables in a radius less than 10 times the cable OD. Use sleeves or grommets to protect cables from vibration at points where they pass around sharp corners and through penetrations.
15. Ground wire shall be copper, and grounding methods shall comply with IEEE C2. Demonstrate ground resistance.

C. Balanced Twisted Pair Cable Installation:

1. Comply with TIA-568-C.2.
2. Do not untwist balanced twisted pair cables more than 1/2 inch at the point of termination to maintain cable geometry.

D. Installation of Control-Circuit Conductors:

1. Install wiring in raceways.
2. Use insulated spade lugs for wire and cable connection to screw terminals.

E. Open-Cable Installation:

1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
2. Suspend copper cable not in a wireway or pathway a minimum of 8 inches above ceilings by cable supports not more than 30 inches apart.
3. Cable shall not be run through or on structural members or in contact with pipes, ducts, or other potentially damaging items. Do not run cables between structural members and corrugated panels.

F. Installation of Cable Routed Exposed under Raised Floors:

1. Install plenum-rated cable only.
2. Install cabling after the flooring system has been installed in raised floor areas.
3. Below each feed point, neatly coil a minimum of 72 inches of cable in a coil not less than 12 inches in diameter.

G. Separation from EMI Sources:

1. Comply with BICSI TDMM and TIA-569-D recommendations for separating unshielded copper voice and data communications cable from potential EMI sources including electrical power lines and equipment.
2. Separation between open communications cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:

    a. Electrical Equipment or Circuit Rating Less Than 2 kVA: A minimum of 5 inches.
    b. Electrical Equipment or Circuit Rating between 2 and 5 kVA: A minimum of 12 inches.
    c. Electrical Equipment or Circuit Rating More Than 5 kVA: A minimum of 24 inches.

3. Separation between communications cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:

    a. Electrical Equipment or Circuit Rating Less Than 2 kVA: A minimum of 2-1/2 inches.
    b. Electrical Equipment or Circuit Rating between 2 and 5 kVA: A minimum of 6 inches.
    c. Electrical Equipment or Circuit Rating More Than 5 kVA: A minimum of 12 inches.

4. Separation between communications cables in grounded metallic raceways and power lines and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:

    a. Electrical Equipment or Circuit Rating Less Than 2 kVA: No requirement.
    b. Electrical Equipment or Circuit Rating between 2 and 5 kVA: A minimum of 3 inches.
    c. Electrical Equipment or Circuit Rating More Than 5 kVA: A minimum of 6 inches.

5. Separation between Communications Cables and Electrical Motors and Transformers, 5 kVA or 5 HP and Larger: A minimum of 48 inches.
6. Separation between Communications Cables and Fluorescent Fixtures: A minimum of 5 inches.

3.4 REMOVAL OF CONDUCTORS AND CABLES

A. Remove abandoned conductors and cables. Abandoned conductors and cables are those installed that are not terminated at equipment and are not identified with a tag for future use.

3.5 CONTROL-CIRCUIT CONDUCTORS

A. Minimum Conductor Sizes:

1. Class 1 remote-control and signal circuits; No 14 AWG.
2. Class 2 low-energy, remote-control, and signal circuits; No. 16 AWG.
3. Class 3 low-energy, remote-control, alarm, and signal circuits; No 12 AWG.

3.6 FIRESTOPPING

A. Comply with TIA-569-D, Annex A, "Firestopping."

B. Comply with BICSI TDMM, "Firestopping" Chapter.

C. Comply with requirements in Section 078413 "Penetration Firestopping."

3.7 GROUNDING

A. For data communication wiring, comply with TIA-607-B and with BICSI TDMM, "Bonding and Grounding (Earthing)" Chapter.

3.8 IDENTIFICATION

A. Identify data and communications system components, wiring, and cabling according to TIA-606-B; label printers shall use label stocks, laminating adhesives, and inks complying with UL 969.

B. Identify each wire on each end and at each terminal with a number-coded identification tag. Each wire shall have a unique tag.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: Director’s Representative will engage a qualified testing agency to perform tests and inspections.

B. Tests and Inspections:

1. Visually inspect cable jacket materials for UL or third-party certification markings. Inspect cabling terminations to confirm color-coding for pin assignments, and inspect cabling connections to confirm compliance with TIA-568-C.1.
2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
3. Test cabling for direct-current loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination, but not after cross-connection.

    a. Test instruments shall meet or exceed applicable requirements in TIA-568-C.2. Perform tests with a tester that complies with performance requirements in its "Test Instruments (Normative)" Annex, complying with measurement accuracy specified in its "Measurement Accuracy (Informative)" Annex. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.

C. Document data for each measurement. Print data for submittals in a summary report that is formatted using Table 10.1 in BICSI TDMM as a guide, or transfer the data from the instrument to the computer, save as text files, print, and submit.

D. End-to-end cabling will be considered defective if it does not pass tests and inspections.

E. Prepare test and inspection reports.

END OF SECTION 260523

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section

1.2 SUMMARY

A. Section includes grounding and bonding systems and equipment, plus the following special applications:

1. Underground distribution grounding.
2. Ground bonding common with lightning protection system.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product indicated.

E. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

F. Coordination Drawings: Plans showing dimensioned locations of grounding features specified in "Field Quality Control" Article, including the following:

1. Test wells.
2. Ground rods.
3. Ground rings.
4. Grounding arrangements and connections for separately derived systems.
5.

G. Field quality-control reports.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For grounding to include in emergency, operation, and maintenance manuals.

1. Plans showing as-built, dimensioned locations of system described in "Field Quality Control" Article, including the following:

a. Test wells.
b. Ground rods.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: Certified by NETA.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

2.2 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Blackburn/T&B Corp.
2. Burndy; Hubbell Incorporated, Construction and Energy.
3. O-Z/Gedney; Emerson Electric Co., Automation Solutions, Appleton Group.
4. Or equal.

2.3 CONDUCTORS

A. Insulated Conductors:Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B3.
2. Stranded Conductors: ASTM B8.

C. Grounding Bus: Predrilled rectangular bars of annealed copper, 1/4 by 4 inches in cross section, with 9/32-inch holes spaced 1-1/8 inches apart. Stand-off insulators for mounting shall comply with UL 891 for use in switchboards, 600 V and shall be Lexan or PVC, impulse tested at 5000 V.

2.4 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

C. Bus-Bar Connectors: Mechanical type, cast silicon bronze, solderlesexothermic-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

D. Bus-Bar Connectors: Compression type, copper or copper alloy, with two wire terminals.

E. Beam Clamps: Mechanical type, terminal, ground wire access from four directions, with dual, tin-plated or silicon bronze bolts.

F. Cable-to-Cable Connectors: Compression type, copper or copper alloy.

G. Conduit Hubs: Mechanical type, terminal with threaded hub.

H. Ground Rod Clamps: Mechanical type, copper or copper alloy, terminal withhex head bolt

I. Ground Rod Clamps: Mechanical type, copper or copper alloy, terminal with hex head bolt.

J. Lay-in Lug Connector: Mechanical type,copper rated for direct burial terminal with set screw.

K. Service Post Connectors: Mechanical type, bronze alloy terminal, in short- and long-stud lengths, capable of single and double conductor connections.

L. Signal Reference Grid Clamp: Mechanical type, stamped-steel terminal with hex head screw.

M. Straps: Solid copper, copper lugs. Rated for 600 A.

N. Tower Ground Clamps: Mechanical type, copper or copper alloy, terminal two-piece clamp.

O. U-Bolt Clamps: Mechanical type, copper or copper alloy, terminal listed for direct burial.

P. Water Pipe Clamps:

1. Mechanical type, two pieces with zinc-plated bolts.

    a. Material: Tin-plated aluminum
    b. Listed for direct burial.

2. U-bolt type with malleable-iron clamp and copper ground connector rated for direct burial.

2.5 GROUNDING ELECTRODES

A. Ground Rods: Copper-cladsteel; 3/4 inch by 10 feet

B. Ground Plates: 1/4 inch thick, hot-dip galvanized.

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8AWG and smaller, and stranded conductors for No. 6AWG and larger unless otherwise indicated.

B. Underground Grounding Conductors: Install bare tinned-copper conductor, No. 2/0AWG minimum.

1. Bury at least 30 inches below grade.
2. Duct-Bank Grounding Conductor: Bury 12 inches above duct bank when indicated as part of duct-bank installation.

C. Grounding Conductors: Green-colored insulation with continuous yellow stripe.

D. Isolated Grounding Conductors: Green-colored insulation with more than one continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow.

E. Grounding Bus: Install in electrical equipment rooms, in rooms housing service equipment, and elsewhere as indicated.

1. Install bus horizontally, on insulated spacers 2 inches minimum from wall, 6 inches above finished floor unless otherwise indicated.
2. Where indicated on both sides of doorways, route bus up to top of door frame, across top of doorway, and down; connect to horizontal bus.

F. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
3. Connections to Ground Rods at Test Wells: Bolted connectors.
4. Connections to Structural Steel: Welded connectors.

3.2 GROUNDING AT THE SERVICE

A. Equipment grounding conductors and grounding electrode conductors shall be connected to the ground bus. Install a main bonding jumper between the neutral and ground buses.

3.3 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS

A. Comply with IEEE C2 grounding requirements.

B. Grounding Manholes and Handholes: Install a driven ground rod through manhole or handhole floor, close to wall, and set rod depth so 4 inches will extend above finished floor. If necessary, install ground rod before manhole is placed and provide No. 1/0 AWG bare, tinned-copper conductor from ground rod into manhole through a waterproof sleeve in manhole wall. Protect ground rods passing through concrete floor with a double wrapping of pressure-sensitive insulating tape or heat-shrunk insulating sleeve from 2 inches above to 6 inches below concrete. Seal floor opening with waterproof, nonshrink grout.

3.4 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:

1. Feeders and branch circuits.
2. Lighting circuits.
3. Receptacle circuits.
4. Single-phase motor and appliance branch circuits.
5. Three-phase motor and appliance branch circuits.
6. Flexible raceway runs.
7. metal-clad cable runs.
8. Busway Supply Circuits: Install insulated equipment grounding conductor from grounding bus in the switchgear, switchboard, or distribution panel to equipment grounding bar terminal on busway.

C. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.

D. Water Heater, Heat-Tracing, and Antifrost Heating Cables: Install a separate insulated equipment grounding conductor to each electric water heater and heat-tracing cable. Bond conductor to heater units, piping, connected equipment, and components.

E. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.

F. Isolated Equipment Enclosure Circuits: For designated equipment supplied by a branch circuit or feeder, isolate equipment enclosure from supply circuit raceway with a nonmetallic raceway fitting listed for the purpose. Install fitting where raceway enters enclosure and install a separate insulated equipment grounding conductor. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.

3.5 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor and install in conduit.

C. Ground Rods: Drive rods until tops are 2 inches below finished floor or final grade unless otherwise indicated.

1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
2. Use exothermic welds for all below-grade connections.

D. Test Wells: Ground rod driven through drilled hole in bottom of handhole. Handholes are specified in Section 260543 "Underground Ducts and Raceways for Electrical Systems," and shall be at least 12 inches deep, with cover.

1. Install at least one test well for each service unless otherwise indicated. Install at the ground rod electrically closest to service entrance. Set top of test well flush with finished grade or floor.

E. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.

F. Grounding and Bonding for Piping:

1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use a bolted clamp connector or bolt a lug-type connector to a pipe flange by using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.

G. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install tinned bonding jumper to bond across flexible duct connections to achieve continuity.

H. Grounding for Steel Building Structure: Install a driven ground rod at base of each corner column and at intermediate exterior columns at distances not more than 60 feet apart.

I. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact are galvanically compatible.

1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
2. Make connections with clean, bare metal at points of contact.
3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
4. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

3.6 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Manufacturer's Field Service: Engage a Company Service Advisor to test and inspect components, assemblies, and equipment installations, including connections.

C. Perform tests and inspections with the assistance of a Company Service Advisor.

D. Tests and Inspections:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal , at ground test wells, and at individual ground rods. Make tests at ground rods before any conductors are connected.

    a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
    b. Perform tests by fall-of-potential method according to IEEE 81.

4. Prepare dimensioned Drawings locating each test well, ground rod and ground-rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and

key to the record of tests and observations. Include the number of rods driven and their depth at each location and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.

E. Prepare test and inspection reports.

F. Report measured ground resistances that exceed the following values:

1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less:[10 ohms.
2. Power Distribution Units or Panelboards Serving Electronic Equipment: **1** ohm(s).
3. Substations and Pad-Mounted Equipment: 5ohms.
4. < ohms.

G. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 260526

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Steel slotted support systems.
2. Aluminum slotted support systems.
3. Conduit and cable support devices.
4. Support for conductors in vertical conduit.
5. Structural steel for fabricated supports and restraints.
6. Mounting, anchoring, and attachment components, including powder-actuated fasteners, mechanical expansion anchors, concrete inserts, clamps, through bolts, toggle bolts, and hanger rods.
7. Fabricated metal equipment support assemblies.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:

a. Slotted support systems, hardware, and accessories.
b. Clamps.
c. Hangers.
d. Sockets.
e. Eye nuts.
f. Fasteners.
g. Anchors.
h. Saddles.
i. Brackets.

2. Include rated capacities and furnished specialties and accessories.

E. Shop Drawings: Signed and sealed by a qualified Professional Engineer**.** For fabrication and installation details for electrical hangers and support systems.

1. Hangers. Include product data for components.
2. Slotted support systems.
3. Equipment supports.

F. Delegated-Design Submittal: For hangers and supports for electrical systems.

1. Include design calculations and details of hangers.

G. Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Suspended ceiling components.
2. Ductwork, piping, fittings, and supports.
3. Structural members to which hangers and supports will be attached.
4. Size and location of initial access modules for acoustical tile.
5. Items penetrating finished ceiling, including the following:

a. Luminaires.
b. Air outlets and inlets.
c. Speakers.
d. Sprinklers.
e. Access panels.
f. Projectors.

1.4 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M.
2. AWS D1.2/D1.2M.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame Rating: Class 1.
2. Self-extinguishing according to ASTM D635.

2.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Preformed steel channels and angles with minimum 13/32-inch-diameter holes at a maximum of 8 inches o.c. in at least one surface.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Atkore International (Unistrut).
b. Eaton (B-line).
c. nVent (CADDY).
d. Or equal.

2. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
3. Material for Channel, Fittings, and Accessories: Galvanized steel
4. Retain first option in "Channel Width" Subparagraph below to allow Contractor to select size of slotted support system.
5. Channel Width: Selected for applicable load criteria.
6. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
7. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
8. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
9. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Aluminum Slotted Support Systems: Extruded-aluminum channels and angles with minimum 13/32-inch- diameter holes at a maximum of 8 inches (o.c. in at least one surface.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Atkore International (Unistrut).
b. Cooper Industries, Inc.
c. Flex-Strut Inc.
d. Or equal.

2. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
3. Channel Material: 6063-T5 aluminum alloy.
4. Fittings and Accessories Material: 5052-H32 aluminum alloy.
5. Channel Width: Selected for applicable load criteria.
6. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
7. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
8. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for nonarmored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be made of malleable iron.

E. Structural Steel for Fabricated Supports and Restraints: ASTM A36/A36M steel plates, shapes, and bars; black and galvanized.

F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

    a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

        1) Hilti, Inc.
        2) ITW Ramset/Red Head; Illinois Tool Works, Inc.
        3) MKT Fastening, LLC.
        4) Or equal.

2. Mechanical-Expansion Anchors: Insert-wedge-type, [zinc-coated] steel, for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

    a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

        1) Eaton (B-line).
        2) Hilti, Inc.
        3) ITW Ramset/Red Head; Illinois Tool Works, Inc.
        4) Or equal.

3. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM F3125/F3125M, Grade A325 (Grade A325M).
6. Toggle Bolts:All -steel springhead type.
7. Hanger Rods: Threaded steel.

2.3 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

A. Description: Welded or bolted structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

PART 3 - EXECUTION

3.1 APPLICATION

A. Comply with the following standards for application and installation requirements of hangers and supports, except where requirements on Drawings or in this Section are stricter:

1. NECA 1.
2. NECA 101
3. NECA 102.

B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceways: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.

C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25percent in future without exceeding specified design load limits.

1. Secure raceways and cables to these supports with two-bolt conduit clamps.

D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch (38-mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings, and for fastening raceways to trapeze supports.

3.2 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this article.

B. Raceway Support Methods: In addition to methods described in NECA 1, EMT andRMC may be supported by openings through structure members, according to NFPA 70.

C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb200 lb (90 kg).

D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.
3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners.
5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm)

thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.

6. To Steel: [Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts.
7. To Light Steel: Sheet metal screws.
8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.

E. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

B. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 CONCRETE BASES

A. Coordinate with C-contractor for the provision of concrete bases.

B. Anchor equipment to concrete base as follows:

1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor bolts to elevations required for proper attachment to supported equipment.
3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

3.5 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).

B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A780.

END OF SECTION 260529

SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Metal conduits and fittings.
2. Nonmetallic conduits and fittings.
3. Metal wireways and auxiliary gutters.
4. Nonmetal wireways and auxiliary gutters.
5. Surface raceways.
6. Boxes, enclosures, and cabinets.
7. Handholes and boxes for exterior underground cabling.

1.3 Related Requirements:

A. Section 078413 "Penetration Firestopping" for firestopping at conduit and box entrances.

B. Section 260543 "Underground Ducts and Raceways for Electrical Systems" for exterior ductbanks, manholes, and underground utility construction.

1.4 DEFINITIONS

A. ARC: Aluminum rigid conduit.

B. GRC: Galvanized rigid steel conduit.

C. IMC: Intermediate metal conduit.

1.5 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

E. Submit an Environmental Product Declaration (EPD) from the manufacturer for steel conduit within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

F. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, and attachment details.

G. Samples: For wireways and for each color and texture specified, 12 inches long.

H. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

1.6 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved:

B. Structural members in paths of conduit groups with common supports.

C. HVAC and plumbing items and architectural features in paths of conduit groups with common supports.

D. Qualification Data: For professional engineer.

PART 2 - PRODUCTS

2.1 METAL CONDUITS AND FITTINGS

A. Metal Conduit:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Allied Tube & Conduit Corp.
b. Western Tube & Conduit Corp.
c. Wheatland Tube Co.
d. Or equal.

2. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
3. GRC: Comply with ANSI C80.1 and UL 6.
4. ARC: Comply with ANSI C80.5 and UL 6A.
5. IMC: Comply with ANSI C80.6 and UL 1242.
6. EMT: Comply with ANSI C80.3 and UL 797.
7. FMC: Comply with UL 1; zinc-coated steel.
8. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.

B. Metal Fittings:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Cooper/Crouse-Hinds.
    b. OZGedney Co.
    c. Thomas & Betts Corp.
    d. Or equal.

2. Comply with NEMA FB 1 and UL 514B.
3. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
4. Fittings, General: Listed and labeled for type of conduit, location, and use.
5. Fittings for EMT:

    a. Material: Steel.
    b. Type: compression.

6. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.
7. Coating for Fittings for PVC-Coated Conduit: Minimum thickness of 0.040 inch (1 mm), with overlapping sleeves protecting threaded joints.

C. Joint Compound for IMC, GRC, or ARC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.2 NONMETALLIC CONDUITS AND FITTINGS

A. Nonmetallic Conduit:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Cantex, Inc.
    b. Carlon.
    c. National Pipe & Plastic Inc.
    d. Or equal.

2. Listing and Labeling: Nonmetallic conduit shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
3. Fiberglass:

    a. Comply with NEMA TC 14.
    b. Comply with UL 2515 for aboveground raceways.
    c. Comply with UL 2420 for belowground raceways.

4. ENT: Comply with NEMA TC 13 and UL 1653.
5. RNC: Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.
6. LFNC: Comply with UL 1660.
7. Coilable HDPE: Preassembled with conductors or cables and complying with ASTM D3485.
8. RTRC: Comply with UL 2515A and NEMA TC 14.

B. Nonmetallic Fittings:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Cantex, Inc.
    b. Carlon.
    c. National Pipe & Plastic Inc.
    d. Or equal.

2. Fittings, General: Listed and labeled for type of conduit, location, and use.
3. Fittings for ENT and RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.

    a. Fittings for LFNC: Comply with UL 514B.

4. Solvents and Adhesives: As recommended by conduit manufacturer.

2.3 METAL WIREWAYS AND AUXILIARY GUTTERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Mono-Systems Inc.
2. Thomas & Betts Corp.
3. Wiremold Co.
4. Or equal.

B. Description: Sheet metal, complying with UL 870 and NEMA 250, Type 1unless otherwise indicated, and sized according to NFPA 70.

1. Metal wireways installed outdoors shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

D. Wireway Covers: Screw-cover type unless otherwise indicated.

E. Finish: Manufacturer's standard enamel finish.

2.4 NONMETALLIC WIREWAYS AND AUXILIARY GUTTERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Hoffman.
2. Carlon.
3. National Pipe & Plastics Inc.
4. Or equal.

B. Listing and Labeling: Nonmetallic wireways and auxiliary gutters shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Description: Fiberglass polyester, extruded and fabricated to required size and shape, without holes or knockouts. Cover shall be gasketed with oil-resistant gasket material and fastened with captive screws treated for corrosion resistance. Connections shall be flanged and have stainless-steel screws and oil-resistant gaskets.

D. Fittings and Accessories: Couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings shall match and mate with wireways as required for complete system.

E. Solvents and Adhesives: As recommended by conduit manufacturer.

2.5 SURFACE RACEWAYS

A. Listing and Labeling: Surface raceways and tele-power poles shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Surface Metal Raceways: Galvanized steel with snap-on covers complying with UL 5. Manufacturer's standard enamel finish in color selected by Architect.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. MonoSystems, Inc.
b. Wiremold; Legrand North America, LLC.
c. Wiring Device-Kellems; Hubbell Incorporated, Commercial, and Industrial.
d. Or equal.

C. Surface Nonmetallic Raceways: Two- or three-piece construction, complying with UL 5A, and manufactured of rigid PVC with texture and color selected by Architect from manufacturer's standard colors. Product shall comply with UL 94 V-0 requirements for self-extinguishing characteristics.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Hubbell Premise Wiring; Hubbell Incorporated, Commercial and Industrial.
b. Panduit Corp.
c. Wiremold; Legrand North America, LLC.
d. Or equal.

2.6 BOXES, ENCLOSURES, AND CABINETS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Appleton - O-Z/Gedney; Emerson Electric Co., Automation Solutions.
2. Eaton (Crouse-Hinds).
3. Hubbell Incorporated.
4. Or equal.

B. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.

C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.

D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, aluminum, Type FD, with gasketed cover.

E. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.

F. Metal Floor Boxes:

1. Material: Sheet metal.
2. Type: Fully adjustable.
3. Shape: Rectangular.
4. Listing and Labeling: Metal floor boxes shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

G. Nonmetallic Floor Boxes: Nonadjustable, round or rectangular.

1. Listing and Labeling: Nonmetallic floor boxes shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

H. Luminaire Outlet Boxes: Nonadjustable, designed for attachment of luminaire weighing 50 lb (23 kg). Outlet boxes designed for attachment of luminaires weighing more than 50 lb (23 kg) shall be listed and marked for the maximum allowable weight.

I. Paddle Fan Outlet Boxes: Nonadjustable, designed for attachment of paddle fan weighing 70 lb (32 kg).

1. Listing and Labeling: Paddle fan outlet boxes shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

J. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

K. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, [cast aluminum] [galvanized, cast iron] with gasketed cover.

L. Box extensions used to accommodate new building finishes shall be of same material as recessed box.

M. Device Box Dimensions: 4 inches square by 2-1/8 inches deep**.**

N. Gangable boxes are allowed.

O. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, Type 1 for indoor and Type 3R for outdoor with continuous-hinge cover with flush latch unless otherwise indicated.

1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
2. Nonmetallic Enclosures: Fiberglass.
3. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.

P. Cabinets:

1. NEMA 250, Type 1 for indoor and Type 3R for outdoor, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
2. Hinged door in front cover with flush latch and concealed hinge.
3. Key latch to match panelboards.
4. Metal barriers to separate wiring of different systems and voltage.
5. Accessory feet where required for freestanding equipment.
6. Nonmetallic cabinets shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

Q. CORROSION RESISTANT BOXES

1. Plastic Coated Outlet and Junction Boxes: Threaded type malleable iron boxes coated with 40 mils thick polyvinylchloride coating.
2. Non-Metallic Junction and Pullboxes: Glass fiber reinforced polyester.

R. General: Precision engraved letters and numbers with uniform margins, character size minimum 3/16 inch high.

1. Phenolic: Two color laminated engraver’s stock, 1/16 inch minimum thickness, machine engraved to expose inner core color (white).
2. Aluminum: Standard aluminum alloy plate stock, minimum .032 inches thick, engraved areas enamel filled or background enameled with natural aluminum engraved characters.

3. Materials for Outdoor Applications: As recommended by nameplate manufacturer to suit environmental conditions.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed Conduit RMC.
2. Concealed Conduit, Aboveground: GRC.
3. Underground Conduit: RNC, Type EPC-40-PVC concrete encased.
4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC .
5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.

B. Indoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed, Not Subject to Physical Damage: EMT.
2. Exposed, Not Subject to Severe Physical Damage: EMT.
3. Exposed and Subject to Severe Physical Damage: GRC . Raceway locations include the following:
    a. Loading dock.
    b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
    c. Mechanical rooms.
    d. Gymnasiums.
4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
6. Damp or Wet Locations: GRC.
7. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4 stainless in institutional and commercial kitchens and damp or wet locations.

C. Minimum Raceway Size: 3/4-inch trade size.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with this type of conduit. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
3. EMT: Use compression steel fittings. Comply with NEMA FB 2.10.
4. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.

E. Install nonferrous conduit or tubing for circuits operating above 60 Hz. Where aluminum raceways are installed for such circuits and pass through concrete, install in nonmetallic sleeve.

F. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.

G. Install surface raceways only where indicated on Drawings.

H. Do not install nonmetallic conduit where ambient temperature exceeds 120 deg F.

3.2 INSTALLATION

A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.

B. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.

C. Do not install raceways or electrical items on any "explosion-relief" walls or rotating equipment.

D. Do not fasten conduits onto the bottom side of a metal deck roof.

E. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

F. Complete raceway installation before starting conductor installation.

G. Arrange stub-ups so curved portions of bends are not visible above finished slab.

H. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches (300 mm) of changes in direction.

I. Make bends in raceway using large-radius preformed ells. Field bending shall be according to NFPA 70 minimum radii requirements. Use only equipment specifically designed for material and size involved.

J. Conceal conduit within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.

K. Support conduit within 12 inches (300 mm) of enclosures to which attached.

L. Raceways Embedded in Slabs:

1. Run conduit larger than 1-inch (27-mm) trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure raceways to reinforcement at maximum 10-foot (3-m) intervals.
2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
3. Arrange raceways to keep a minimum of 2 inches of concrete cover in all directions.

4. Do not embed threadless fittings in concrete unless specifically approved by Architect for each specific location.

M. Stub-Ups to Above Recessed Ceilings:

1. Use EMT, IMC, or RMC for raceways.
2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.

N. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.

O. Coat field-cut threads on PVC-coated raceway with a corrosion-preventing conductive compound prior to assembly.

P. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.

Q. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch (35mm) trade size and insulated throat metal bushings on 1-1/2-inch (41-mm) trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.

R. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.

S. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.

T. Cut conduit perpendicular to the length. For conduits 2-inch (53-mm) trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.

U. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.

V. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.

W. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where an underground service raceway enters a building or structure.
3. Conduit extending from interior to exterior of building.

4. Conduit extending into pressurized duct and equipment.
5. Conduit extending into pressurized zones that are automatically controlled to maintain different pressure set points.
6. Where otherwise required by NFPA 70.

X. Comply with manufacturer's written instructions for solvent welding RNC and fittings.

Y. Expansion-Joint Fittings:

1. Install in each run of aboveground RNC that is located where environmental temperature change may exceed 30 deg F (17 deg C) and that has straight-run length that exceeds 25 feet (7.6 m). Install in each run of aboveground RMC and EMTconduit that is located where environmental temperature change may exceed 100 deg F (55 deg C) and that has straight-run length that exceeds 100 feet (30 m).
2. Install type and quantity of fittings that accommodate temperature change listed for each of the following locations:

    a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
    b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.

3. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F (0.06 mm per meter of length of straight run per deg C) of temperature change for PVC conduits. Install fitting(s) that provide expansion and contraction for at least 0.000078 inch per foot of length of straight run per deg F (0.0115 mm per meter of length of straight run per deg C) of temperature change for metal conduits.
4. Install expansion fittings at all locations where conduits cross building or structure expansion joints.
5. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.

Z. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches of flexible conduit for recessed and semirecessed luminaries**,**]equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

1. Use LFMC in damp or wet locations subject to severe physical damage.
2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.

AA. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.

BB. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a raintight connection between box and cover plate or supported equipment and box.

CC. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.

DD. Locate boxes so that cover or plate will not span different building finishes.

EE. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.

FF. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

GG. Set metal floor boxes level and flush with finished floor surface.

HH. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.

II. Number of Raceways: Do not change number of raceways to less than the number indicated on the drawings.

1. Each raceway shall enclose one circuit unless otherwise indicated on the drawings.

JJ. Number of Raceways: Do not change number of raceways to less than the number indicated on the drawings except when appropriate for advantageous reuse of existing exposed and concealed raceways (The contract documents do not indicate location, number, size or condition of existing raceways). Existing raceways may be reused if the following conditions are met:

1. The existing raceway must be of adequate size for the new conductors to be installed therein (NFPA 70 Chapter 9, Tables 1, 4, & 5; Appendix C, Tables C1-C12a). More circuits may be enclosed by existing raceways than the circuiting shown on the drawings provided conductor sizes are increased to compensate for derating (adjustment factors) and other considerations required by NFPA 70 Article 310-15.
2. Remove existing conductors.
3. Demonstrate to the Director's Representative that the existing raceway is clear of obstructions and in good condition.
4. Check ground continuity. When ground continuity of existing raceway is inadequate install insulated grounding bushings, grounding wedges, bonding straps, grounding jumpers or equipment grounding conductors to establish effective path to ground.
5. Install insulated bushings to replace damaged or missing bushings. Replace non-insulated bushings with insulated bushings on raceway sizes 1 inch and larger.
6. Install vertical conductor supports to replace existing or missing vertical conductor supports.
7. Install extension rings on existing boxes when the number of new conductors installed therein exceeds NFPA 70 requirements.
8. Furnish the Director's Representative with marked up drawings showing size and routing of existing raceways with number and size of new conductors installed therein. The drawings will be forwarded to the design Director's Representative for verification of NFPA 70 compliance.
9. Furnish the Director's Representative with marked up drawings showing size and routing of existing raceways with number and size of new conductors installed therein. The drawings will be forwarded to the design Director's Representative engineer for verification of NFPA 70 compliance.

Lighting Fixtures	6'-0"
Lighting Fixtures in Stairway	7'-6"
Exit Lights	8'-0" where ceiling height allows a minimum of 6 inch clearance between ceiling and top of exit light. Otherwise

	mount exit light so that it's top is 6 inches below finished ceiling. Adjust height and clearances as required to suit installation over doors.
Night Lights	2'-0"
Hose Cabinet Lights	1'-0" above top of cabinet
Switches	4'-0"
Single & Duplex Receptacles	1'-6"*
Water Cooler Receptacles	2'-0"
Clock Receptacles	7'-6"
Range Receptacle	1'-6"
Special Purpose Receptacles	4'-0"
Thermostats	5'-0"
Manual Fire Alarm Boxes	4'-0"
Audible Notification Appliances	8'-0" where ceiling height allows a minimum of 6 inch clearance between ceiling and top of appliance. Otherwise mount appliance so that it's top is 6 inches below finished ceiling.
Visible Notification Appliances	Install outlet so that the bottom of the visible lens will be 6'-8" AFF.
Combination Audible/Visible Notification Appliances	Install outlet so that the bottom of the visual lens will be 6'-8" AFF, and the audible section will be above the visible section.
Radio	2'-0"
Television	2'-0"
Telecommunications	2'-0"
Telephone	2'-0"
Telephone Marked W.T.	Install outlet so that the highest operable part of the wall mounted telephone will not be more than 4'-0" AFF.

KK. Raceway Schedule:

1. Rigid Ferrous Metal Conduit: Install in all locations unless otherwise specified or indicated on the drawings.
2. Intermediate Ferrous Metal Conduit: May be installed in all dry and damp locations except:

    a. Hazardous areas.
    b. Where other type raceways are specified or indicated on the drawings.

3. Electrical Metallic Tubing:

    a. May be installed concealed as branch circuit conduits above suspended ceilings where conduit does not support fixtures or other equipment.
    b. May be installed concealed as branch circuit conduits in hollow areas in dry locations, including:

        1) Hollow concrete masonry units, except where cores are to be filled.
        2) Drywall construction with sheet metal studs, except where studs are less than 3-1/2 inches deep.

c. May be installed exposed as branch circuit conduits in dry non-hazardous locations at elevations over 10'-0" above finished floor where conduit does not support fixtures or other equipment.

4. Flexible Metal Conduit: Install equipment grounding conductor in the flexible metal conduit and bond at each box or equipment to which conduit is connected:

   a. Use for final conduit connection to recessed lighting fixtures in suspended ceilings. Use 4 to 6 feet of flexible metal conduit (minimum size 1/2 inch) between junction box and fixture. Locate junction box at least 1 foot from fixture and accessible if the fixture is removed.
   b. Use 1 to 3 feet of flexible metal conduit for final conduit connection to:

      1) Emergency lighting units.
      2) Dry type transformers.
      3) Motors with open, drip-proof or splash-proof housings.
      4) Equipment subject to vibration (dry locations).
      5) Equipment requiring flexible connection for adjustment or alignment (dry locations).

   c. Use for concealed branch circuit conduits above existing non-removable suspended ceilings where rigid type raceways cannot be installed due to inaccessibility of space above ceiling.
   d. May be installed concealed as branch circuit conduits in drywall construction with sheet metal studs, except where studs are less than 3-1/2 inches deep.

5. Liquid-tight Flexible Metal Conduit: Install equipment grounding conductor in liquid-tight flexible metal conduit and bond at each box or equipment to which conduit is connected:

   a. Use 1 to 3 feet of liquid-tight flexible metal conduit (UL listed and marked suitable for the installation's temperature and environmental conditions) for final conduit connection to:

      1) Motors with weather-protected or totally enclosed housings.
      2) Equipment subject to vibration (damp and wet locations).
      3) Equipment requiring flexible connection for adjustment or alignment (damp and wet locations).

6. Surface Metal Raceway: Use as exposed raceway system in finished spaces at locations indicated on the drawings.

   a. Use surface metal raceway system of size required for number of wires to be installed therein. (Use specific size when indicated on the drawings).
   b. Do not run raceway through walls that have a plaster finish nor through masonry walls or floors. Install a pipe sleeve, or a short length of conduit with junction boxes or adapter fittings for raceway runs through such areas. Run raceway along top of baseboards, care being taken to avoid telephone and other signal wiring. Where raceway crosses chair railing or picture molding, cut the chair railing or picture molding to permit the raceway to lie flat against the wall. Run raceway around door

frames and other openings. Run raceway on ceiling or walls perpendicular to or parallel with walls and floors.

c. Secure raceway at intervals not exceeding 36 inches.

d. Install separate equipment grounding conductor for grounding of equipment. The raceway alone will not be considered suitable for use as an effective path to ground.

e. Outlet box covers for pendant mounted fluorescent fixtures may be omitted if the fixture canopy is notched to receive the raceway and the canopy fits snugly against the ceiling.

f. Where equipment is mounted on an outlet box and the equipment base is larger than the outlet box, provide finishing collar around equipment base and outlet box or provide finishing collar/outlet box:

1) Finishing Collar: Same finish and peripheral dimensions as the equipment base, including provisions for mounting, slots to fit over raceway and of depth to cover outlet box and extend back to ceiling or wall.

2) Combination Finishing Collar/Outlet Box: Same finish and peripheral dimensions as the equipment base to be mounted thereon, gage or thickness of metal as required by National Electrical Code, including provision for mounting and knockouts for entrance of raceway.

7. Wireways: May be used indoors in dry locations for exposed raceway between grouped, wall mounted equipment.

LL. Box Schedule for Concealed Conduit System:

1. Non-Fire Rated Construction:

a. Depth: To suit job conditions and comply with NFPA 70 Article 370.

b. For Lighting Fixtures: Use galvanized steel outlet boxes designed for the purpose.

1) For Fixtures Weighing 50 lbs. or Less: Box marked “FOR FIXTURE SUPPORT”.

2) For Fixtures More Than 50 lbs: Box listed and marked with the weight of the fixture to be supported (or support fixture independent of the box).

c. For Junction and Pull Boxes: Use galvanized steel boxes with flush covers.

d. For Switches, Receptacles, Etc:

1) Plaster or Cast-In-Place Concrete Walls: Use 4 inch or 4-11/16 inch galvanized steel boxes with device covers.

2) Walls Other Than Plaster or Cast-In-Place Concrete: Use type of galvanized steel box which will allow wall plate to cover the opening made for the installation of the box.

2. Recessed Boxes in Fire Rated (2 hour maximum) Bearing and Nonbearing Wood or Steel Stud Walls (Gypsum Wallboard Facings):

a. Use listed single and double gang metallic outlet and switch boxes. The surface area of individual outlet or switch boxes shall not exceed 16 square inches.

b. The aggregate surface area of the boxes shall not exceed 100 square inches per 100 square feet of wall surface.

c. Securely fasten boxes to the studs. Verify that the opening in the wallboard facing is cut so that the clearance between the box and the wallboard does not exceed 1/8 inch.
d. Separate boxes located on opposite sides of walls or partitions by a minimum horizontal distance of 24 inches. This minimum separation distance may be reduced when wall opening protective materials are installed according to the requirements of their classification.
e. Use wall opening protective material in conjunction with boxes installed on opposite sides of walls or partitions of staggered stud construction in accordance with the classification requirements for the protective material.

3. Other Fire Rated Construction: Use materials and methods to comply with the listing requirements for the classified construction. Conduits Penetrating Concrete Floor Slabs (Concrete slabs that are both ceilings and floors shall be treated as floor slabs):

a. Provide a minimum of 2 inches between conduits that vertically penetrate elevated concrete slabs.

MM. Conduit Installed Exposed:

1. Install conduit exposed where indicated on the drawings. If not indicated, conduit may be installed exposed, as approved, in:

a. Unfinished spaces, and finished spaces housing mechanical or electrical equipment that is generally accessible only to facility maintenance personnel.
b. Areas where existing conduits have been installed exposed.
c. Areas where conduit cannot be installed concealed.

2. Install conduit tight to the surface of the building construction. Exception:

a. Where otherwise indicated or directed.

3. Install vertical runs perpendicular to the floor.
4. Install runs on the ceiling perpendicular or parallel to the walls.
5. Install horizontal runs parallel to the floor.
6. Do not run conduits near heating pipes.
7. Installation of conduit directly on the floor will not be permitted.

NN. Box Schedule for Exposed Conduit System:

1. Dry and Damp Locations: Use zinc electroplate or hot dipped galvanized threaded type malleable iron or cast iron alloy outlet, junction, and pullboxes or conduit bodies provided with a volume marking in conjunction with ferrous raceways unless otherwise specified or indicated on the drawings.

a. Galvanized steel boxes may be used in conjunction with conduit sizes over 1 inch in non-hazardous dry and damp locations.
b. Galvanized steel boxes may be used in conjunction with electrical metallic tubing where it is allowed (specified) to be installed exposed as branch circuit conduits at elevations over 10’-0” above finished floor.

2. Wet Locations: Use threaded type malleable iron or cast iron alloy outlet junction, and pullboxes or conduit bodies (provided with a volume marking) with hot dipped galvanized or other specified corrosion resistant coating in conjunction with ferrous raceways unless otherwise specified or indicated on the drawings.

    a. Use corrosion resistant boxes in conjunction with plastic coated rigid ferrous metal conduit.

3. Finishing Collar or Combination Finishing Collar/Outlet Box (Surface Mounted Equipment Used with Exposed Raceway):

    a. Use finishing collar where surface mounted equipment is installed on an exposed raceway outlet box and the equipment base is larger than the outlet box.
    b. Use combination finishing collar/outlet box where surface mounted equipment is not indicated to be installed on an exposed raceway outlet box, but raceway cannot be run directly into equipment body due to equipment design.

3.3 INSTALLATION OF UNDERGROUND CONDUIT

A. Direct-Buried Conduit:

1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Section 310000 "Earthwork" for pipe less than 6 inches (150 mm) in nominal diameter.
2. Install backfill as specified in Section 31000 "Earthwork."
3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches (300 mm) of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Section 310000 "Earthwork."
4. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through floor unless otherwise indicated. Encase elbows for stub-up ducts throughout length of elbow.
5. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through floor.

    a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches (75 mm) of concrete for a minimum of 12 inches (300 mm) on each side of the coupling.
    b. For stub-ups at equipment mounted on outdoor concrete bases and where conduits penetrate building foundations, extend steel conduit horizontally a minimum of 60 inches (1500 mm) from edge of foundation or equipment base. Install insulated grounding bushings on terminations at equipment.

6. Underground Warning Tape: Comply with requirements in Section 260553 "Identification for Electrical Systems."

3.4 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES

A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.

B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch (12.5-mm) sieve to No. 4 (4.75-mm) sieve and compacted to same density as adjacent undisturbed earth.

C. Elevation: In paved areas, set so cover surface will be flush with finished grade. Set covers of other enclosures 1 inch (25 mm) above finished grade.

D. Install handholes with bottom below frost line, 4 feet below grade.

E. Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated. Select arm lengths to be long enough to provide spare space for future cables but short enough to preserve adequate working clearances in enclosure.

F. Field-cut openings for conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

3.5 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.6 FIRESTOPPING

A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

3.7 PROTECTION

A. Protect coatings, finishes, and cabinets from damage and deterioration.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533

SECTION 260543 - UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Metal conduits and fittings, including GRC and PVC-coated steel conduit.
2. Rigid nonmetallic duct.
3. Flexible nonmetallic duct.
4. Duct accessories.
5. Precast concrete handholes.
6. Polymer concrete handholes and boxes with polymer concrete cover.
7. Fiberglass handholes and boxes with polymer concrete cover.
8. Fiberglass handholes and boxes.
9. High-density plastic boxes.
10. Precast manholes.
11. Cast-in-place manholes.
12. Utility structure accessories.

1.3 DEFINITIONS

A. Direct Buried: Duct or a duct bank that is buried in the ground, without any additional casing materials such as concrete.

B. Duct: A single duct or multiple ducts. Duct may be either installed singly or as component of a duct bank.

C. Duct Bank:

1. Two or more ducts installed in parallel, with or without additional casing materials.
2. Multiple duct banks.

D. GRC: Galvanized rigid (steel) conduit.

E. Trafficways: Locations where vehicular or pedestrian traffic is a normal course of events.

1.4 ACTION SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

1. Include duct-bank materials, including spacers and miscellaneous components.
2. Include duct, conduits, and their accessories, including elbows, end bells, bends, fittings, and solvent cement.
3. Include accessories for manholes, handholes, boxes**,** and other utility structures.
4. Include underground-line warning tape.
5. Include warning planks.

E. Submit an Environmental Product Declaration (EPD) from the manufacturer for steel conduit and precast handholes and boxes within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

F. Shop Drawings:

1. Precast or Factory-Fabricated Underground Utility Structures:

a. Include plans, elevations, sections, details, attachments to other work, and accessories.
b. Include duct entry provisions, including locations and duct sizes.
c. Include reinforcement details.
d. Include frame and cover design and manhole chimneys.
e. Include ladder and/or step details.
f. Include grounding details.
g. Include dimensioned locations of cable rack inserts, pulling-in and lifting irons, and sumps.
h. Include joint details.

2. Factory-Fabricated Handholes and Boxes Other Than Precast Concrete:

a. Include dimensioned plans, sections, and elevations, and fabrication and installation details.
b. Include duct entry provisions, including locations and duct sizes.
c. Include cover design.
d. Include grounding details.
e. Include dimensioned locations of cable rack inserts, and pulling-in and lifting irons.

G. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

H. Coordination Drawings: For duct and duct bank. Show duct profiles and coordination with other utilities and underground structures.

1. Include plans and sections, drawn to scale, and show bends and locations of expansion fittings.
2. Drawings shall be signed and sealed by a qualified professional engineer.

I. Qualification Data: For professional engineer and testing agency responsible for testing nonconcrete handholes and boxes.

J. Product Certificates: For concrete and steel used in precast concrete manholes and handholes, as required by ASTM C858.

K. Source quality-control reports.

L. Field quality-control reports.

1.5 MAINTENANCE MATERIALS SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

B. Furnish cable-support stanchions, arms, insulators, and associated fasteners in quantities equal to 5 percent of quantity of each item installed.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM E329 for testing indicated.

B. Qualifications of Supervisor: The person supervising the Work of this Section shall be personally experienced in this type of Work and shall have been regularly employed by a company engaged in underground pipe or conduit cleaning for a minimum of 2 years.

1. Furnish to the Director Representative the names and addresses of 3 similar projects which the supervisor has worked on.

1.7 FIELD CONDITIONS

A. Ground Water: Assume ground-water level is at grade level unless a lower water table is noted on Drawings.

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND FITTINGS

A. GRC: Comply with ANSI C80.1 and UL 6.

B. Coated Steel Conduit: PVC-coated GRC .

1. Comply with NEMA RN 1.
2. Coating Thickness: 0.040-inch, minimum.

C. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Atkore International (Allied Tube & Conduit).
2. Western Tube and Conduit Corporation.
3. Wheatland Tube Company.
4. Or equal.

D. Listed and labeled as defined in NFPA 70, by a nationally recognized testing laboratory, and marked for intended location and application.

2.2 RIGID NONMETALLIC DUCT

A. Underground Plastic Utilities Duct: EPC-40-PVC RNC, complying with NEMA TC 2 and UL 651, with matching fittings complying with NEMA TC 3 by same manufacturer as duct.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Cantex Inc.
2. National Pipe & Plastics.
3. Opti-Com Manufacturing Network, Inc (OMNI).
4. Or equal.

C. Listed and labeled as defined in NFPA 70, by a nationally recognized testing laboratory, and marked for intended location and application.

D. Solvents and Adhesives: As recommended by conduit manufacturer.

2.3 DUCT ACCESSORIES

A. Duct Spacers: Factory-fabricated, rigid, PVC interlocking spacers; sized for type and size of duct with which used and selected to provide minimum duct spacing indicated while supporting duct during concreting or backfilling.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Atkore International (Allied Tube & Conduit).
    b. Cantex Inc.
    c. Carlon; a brand of Thomas & Betts Corporation.
    d. Or equal.

B. Concrete Warning Planks: Nominal 12 by 24 by 3 inches in size, manufactured from 6000-psi (41-MPa) concrete.

1. Color: Red dye added to concrete during batching.
2. Mark each plank with "ELECTRIC" in 2-inch- (50-mm-) high, 3/8-inch- (10-mm-) deep letters.

C. Drag Line:

1. Minimum 1/8” polypropylene monofilament utility rope:

    a. American Synthetic Ropes’ Flotorope.
    b. Greenlee Tool Co.’s 2 ply Rope 431.
    c. Ideal’s Pro-Pull Rope 3/16.
    d. Thomas Industries/Jet Line Products Rope 232.

D. Conduit Seals:

1. Wood or plastic plugs designed for the purpose or a contrasting color cement/sand mixture. Seals shall be removable for future use of conduits. Seals shall include waterproof tag stating “CONDUIT CLEANED” and date (month, year).

2.4 SOURCE QUALITY CONTROL

A. Test and inspect precast concrete utility structures according to ASTM C1037.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate layout and installation of duct, duct bank, manholes, handholes, and boxes with final arrangement of other utilities, site grading, and surface features as determined in the field. Notify Architect if there is a conflict between areas of excavation and existing structures or archaeological sites to remain.

B. Coordinate elevations of duct and duct-bank entrances into manholes, handholes, and boxes with final locations and profiles of duct and duct banks, as determined by coordination with other utilities, underground obstructions, and surface features. Revise locations and elevations as

required to suit field conditions and to ensure that duct and duct bank will drain to manholes and handholes, and as approved by the Director's Representative.

3.2 UNDERGROUND DUCT APPLICATION

A. Duct for Electrical Feeders 600 V and Less: Type EPC-40-PVC [RNC, concrete-encased unless otherwise indicated.

B. Bored Underground Duct: Type EPEC-40-HDPE unless otherwise indicated.

C. Underground Ducts Crossing Paved Paths and Driveways Type EPC-40 PVC RNC, encased in reinforced concrete.

D. Stub-ups: Concrete-encased PVC-coated GRC.

3.3 EARTHWORK

A. Restoration: Replace area immediately after backfilling is completed.

B. Restore surface features at areas disturbed by excavation and re-establish original grades unless otherwise indicated. Replace removed sod immediately after backfilling is completed.

C. Restore areas disturbed by trenching, storing of dirt, cable laying, and other work. Restore vegetation and include necessary topsoiling, fertilizing, liming, seeding, sodding, sprigging, and mulching. Comply with Section 329200 "Turf and Grasses" and Section 329300 "Plants."

3.4 DUCT AND DUCT-BANK INSTALLATION

A. Where indicated on Drawings, install duct, spacers, and accessories into the duct-bank configuration shown. Duct installation requirements in this Section also apply to duct bank.

B. Install duct according to NEMA TCB 2.

C. Slope: Pitch duct a minimum slope of 1:300 down toward manholes and handholes and away from buildings and equipment. Slope duct from a high point between two manholes, to drain in both directions.

D. Curves and Bends: Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with a minimum radius of 48 inches [, both horizontally and vertically, at other locations unless otherwise indicated.

1. Duct shall have maximum of two 90 degree bends or the total of all bends shall be no more 180 degrees between pull points.

E. Joints: Use solvent-cemented joints in duct and fittings and make watertight according to manufacturer's written instructions. Stagger couplings so those of adjacent duct do not lie in same plane.

F. Installation Adjacent to High-Temperature Steam Lines: Where duct is installed parallel to underground steam lines, perform calculations showing the duct will not be subject to environmental temperatures above 40 deg C. Where environmental temperatures are calculated to rise above 40 deg C, and anywhere the duct crosses above an underground steam line, install insulation blankets listed for direct burial to isolate the duct bank from the steam line.

G. End Bell Entrances to Manholes and Concrete and Polymer Concrete Handholes: Use end bells, spaced approximately 10 inches (250 mm) o.c. for 5-inch (125-mm) duct, and vary proportionately for other duct sizes.

1. Begin change from regular spacing to end-bell spacing 10 feet (3 m) from the end bell, without reducing duct slope and without forming a trap in the line.
2. Expansion and Deflection Fittings: Install an expansion and deflection fitting in each duct in the area of disturbed earth adjacent to manhole or handhole. Install an expansion fitting near the center of all straight line direct-buried duct with calculated expansion of more than 3/4 inch (19 mm).
3. Grout end bells into structure walls from both sides to provide watertight entrances.

H. Terminator Entrances to Manholes and Concrete and Polymer Concrete Handholes: Use manufactured, cast-in-place duct terminators, with entrances into structure spaced approximately 6 inches (150 mm) o.c. for 4-inch (100-mm) duct, and vary proportionately for other duct sizes.

1. Begin change from regular spacing to terminator spacing 10 feet (3 m) from the terminator, without reducing duct line slope and without forming a trap in the line.
2. Expansion and Deflection Fittings: Install an expansion and deflection fitting in each duct in the area of disturbed earth adjacent to manhole or handhole. Install an expansion fitting near the center of all straight line duct with calculated expansion of more than 3/4 inch (19 mm).

I. Building Wall Penetrations: Make a transition from underground duct to GRC at least 10 feet (3 m) outside the building wall, without reducing duct line slope away from the building and without forming a trap in the line. Use fittings manufactured for RNC-to-GRC transition. Install GRC penetrations of building walls as specified in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

J. Sealing: Provide temporary closure at terminations of duct with pulled cables. Seal spare duct at terminations. Use sealing compound and plugs to withstand at least 15-psig (1.03-MPa) hydrostatic pressure.

K. Pulling Cord: Install 200-lbf test nylon cord in empty ducts.

L. Concrete-Encased Ducts and Duct Bank:

1. Excavate trench bottom to provide firm and uniform support for duct. Prepare trench bottoms as specified in Section 310000 "Earthwork" for pipes less than 6 inches (150 mm) in nominal diameter.
2. Width: Excavate trench 3 inches (75 mm) wider than duct on each side.
3. Depth: Install so top of duct envelope is at least 24 inches (600 mm) below finished grade in areas not subject to deliberate traffic, and at least 30 inches (750 mm) below finished grade in deliberate traffic paths for vehicles unless otherwise indicated.

4. Support duct on duct spacers coordinated with duct size, duct spacing, and outdoor temperature.
5. Spacer Installation: Place spacers close enough to prevent sagging and deforming of duct, with not less than four spacers per 20 feet of duct. Place spacers within 24 inches of duct ends. Stagger spacers approximately 6 inches between tiers. Secure spacers to earth and to duct to prevent floating during concreting. Tie entire assembly together using fabric straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around ducts or duct groups.
6. Minimum Space between Duct: 3 inches between edge of duct and exterior envelope wall, 2 inches between ducts for like services, and 4 inches between power and communications ducts.
7. Elbows: Use manufactured duct elbows for stub-ups, at building entrances, and at changes of direction in duct unless otherwise indicated. Extend encasement throughout length of elbow.
8. Elbows: Use manufactured GRC elbows for stub-ups, at building entrances, and at changes of direction in duct run.

    a. Couple RNC duct to GRC with adapters designed for this purpose and encase coupling with 3 inches of concrete.

    b. Stub-ups to Indoor Equipment: Extend concrete-encased GRC horizontally a minimum of 60 inches from edge of wall. Install insulated grounding bushings on terminations at equipment.

        1) Stub-ups shall be minimum 4 inches above finished floor and no less than 3 inches from conduit side to edge of slab.

9. Reinforcement: Reinforce concrete-encased duct where crossing disturbed earth and where indicated. Arrange reinforcing rods and ties without forming conductive or magnetic loops around ducts or duct groups.
10. Forms: Use walls of trench to form side walls of duct bank where soil is self-supporting and concrete envelope can be poured without soil inclusions; otherwise, use forms.
11. Concrete Cover: Install a minimum of 3 inches of concrete cover between edge of duct to exterior envelope wall, 2 inches between duct of like services, and 4 inches between power and communications ducts.
12. Concreting Sequence: Pour each run of envelope between manholes or other terminations in one continuous operation.

    a. Start at one end and finish at the other, allowing for expansion and contraction of duct as its temperature changes during and after the pour. Use expansion fittings installed according to manufacturer's written instructions or use other specific measures to prevent expansion-contraction damage.
    b. If more than one pour is necessary, terminate each pour in a vertical plane and install 3/4-inch (15-mm) reinforcing-rod dowels extending a minimum of 18 inches (450 mm) into concrete on both sides of joint near corners of envelope.

13. Pouring Concrete: Comply with requirements in "Concrete Placement" Article in Section 033000 "Cast-in-Place Concrete." Place concrete carefully during pours to prevent voids under and between duct and at exterior surface of envelope. Do not allow a heavy mass of concrete to fall directly onto ducts. Allow concrete to flow around duct and rise up

in middle, uniformly filling all open spaces. Do not use power-driven agitating equipment unless specifically designed for duct-installation application.

M. Warning Planks: Bury warning planks approximately 12 inches above direct-buried duct, placing them 24 inches o.c. Align planks along the width and along the centerline of duct or duct bank. Provide an additional plank for each 12-inch (300-mm) increment of duct-bank width over a nominal 18 inches (450 mm). Space additional planks 12 inches (300 mm) apart, horizontally.

N. Underground-Line Warning Tape: Bury nonconducting underground line specified in Section 260553 "Identification for Electrical Systems" no less than 12 inches above all concrete-encased duct and duct banksand approximately 12 inches below grade. Align tape parallel to and within 3 inches of centerline of duct bank. Provide an additional warning tape for each 12-inch increment of duct-bank width over a nominal 18 inches . Space additional tapes 12 inches apart, horizontally.

3.5 CLEANING

A. Pull leather-washer-type duct cleaner, with graduated washer sizes, through full length of duct until duct cleaner indicates that duct is clear of dirt and debris. Follow with rubber duct swab for final cleaning and to assist in spreading lubricant throughout ducts.

B. Clean internal surfaces of manholes, including sump.

1. Sweep floor, removing dirt and debris.
2. Remove foreign material.

END OF SECTION 260543

SECTION 260544 - SLEEVES AND SLEEVE SEALS FOR ELECTRICAL RACEWAYS AND CABLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Round sleeves.
2. Rectangular sleeves.
3. Sleeve seal systems.
4. Grout.
5. Pourable sealants.
6. Foam sealants

1.3 RELATED ITEMS:

A. Section 078413 "Penetration Firestopping" for penetration firestopping installed in fire-resistance-rated walls, horizontal assemblies, and smoke barriers, with and without penetrating items

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

E. Submit an Environmental Product Declaration (EPD) from the manufacturer for steel pipe sleeves within this specification section, if available. A statement of the contractor’s good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044

Environmental management – Life cycle assessment, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

PART 2 - PRODUCTS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. O-Z Gedney.
2. b. Link-Seal.
3. Calpico, Inc.

2.2 ROUND SLEEVES

A. Wall Sleeves, Steel:

1. Description: ASTM A53/A53M, Type E, Grade B, Schedule 40, zinc coated, plain ends and integral waterstop.

B. Wall Sleeves, Cast Iron:

1. Description: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop.

C. Pipe Sleeves, PVC:

1. Description: ASTM D1785, Schedule 40.

D. Molded Sleeves, PVC:

1. Description: With nailing flange for attaching to wooden forms.

E. Molded Sleeves, PE, or PP:

1. Description: Removable, tapered-cup shaped, and smooth outer surface with nailing flange for attaching to wooden forms.

F. Sheet Metal Sleeves, Galvanized Steel, Round:

1. Description: Galvanized-steel sheet; thickness not less than 0.0239-inch (0.6-mm); round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.

2.3 RECTANGULAR SLEEVES

A. Sheet Metal Sleeves, Galvanized Steel, Rectangular:

1. Description:

a. Material: Galvanized sheet steel.
b. Minimum Metal Thickness:

1) For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and with no side larger than 16 inches (400 mm), thickness must be 0.052 inch (1.3 mm).
2) For sleeve cross-section rectangle perimeter not less than 50 inches (1270 mm) or with one or more sides larger than 16 inches (400 mm), thickness must be 0.138 inch (3.5 mm).

2.4 SLEEVE SEAL SYSTEMS

A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable or between raceway and cable.

1. Sealing Elements: EDPM rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
2. Pressure Plates: Stainless steel.
3. Connecting Bolts and Nuts: Stainless steel of length required to secure pressure plates to sealing elements.

2.5 GROUT

A. Description: Nonshrink; recommended for interior and exterior sealing openings in non-fire-rated walls or floors.

1. Standard: ASTM C1107/C1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
2. Design Mix: 5000-psi (34.5-MPa), 28-day compressive strength.
3. Packaging: Premixed and factory packaged.

2.6 POURABLE SEALANTS

A. Description: Single-component, neutral-curing elastomeric sealants of grade indicated below.

1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.

2.7 FOAM SEALANTS

A. Description: Multicomponent, liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam. Foam expansion must not damage cables or crack penetrated structure.

PART 3 - EXECUTION

3.1 INSTALLATION OF SLEEVES FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS

A. Comply with NECA 1.

B. Sleeves for Conduits Penetrating Above-Grade, Non-Fire-Rated, Concrete and Masonry-Unit Floors and Walls:

1. Interior Penetrations of Non-Fire-Rated Walls and Floors:

a. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall or floor so no voids remain. Tool exposed surfaces smooth; protect material while curing.
b. Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Section 079200 "Joint Sealants."

2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
3. Size pipe sleeves to provide 1/4 inch annular clear space between sleeve and raceway or cable, unless sleeve seal system is to be installed.
4. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of walls. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.
5. Install sleeves for floor penetrations. Extend sleeves installed in floors 2 inches above finished floor level. Install sleeves during erection of floors.

C. Sleeves for Conduits Penetrating Non-Fire-Rated Wall Assemblies:

1. Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.
2. Seal space outside of sleeves with approved joint compound for wall assemblies.

D. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.

E. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seal systems. Size sleeves to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.

F. Underground, Exterior-Wall and Floor Penetrations:

1. Install steelm pipe sleeves with integral waterstops. Size sleeves to allow for 1-inch (25-mm) annular clear space between raceway or cable and sleeve for installing sleeve seal system. Install sleeve during construction of floor or wall.

3.2 INSTALLATION OF RECTANGULAR SLEEVES AND SLEEVE SEALS

A. Install sleeves in existing walls without compromising structural integrity of walls. Do not cut structural elements without reinforcing the wall to maintain the designed weight bearing and wall stiffness.

B. Install conduits and cable with no crossings within the sleeve.

C. Fill opening around conduits and cables with expanding foam without leaving voids.

D. Provide metal sheet covering at both wall surfaces and finish to match surrounding surfaces. Metal sheet must be same material as sleeve.

3.3 INSTALLATION OF SLEEVE SEAL SYSTEMS

A. Install sleeve seal systems in sleeves in exterior concrete walls and slabs-on-grade at raceway entries into building.

B. Install type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

END OF SECTION 260544

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Labels.
2. Bands and tubes.
3. Tapes and stencils.
4. Tags.
5. Signs.
6. Cable ties.
7. Miscellaneous identification products.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for electrical identification products.

E. Samples: For each type of label and sign to illustrate composition, size, colors, lettering style, mounting provisions, and graphic features of identification products.

F. Identification Schedule: For each piece of electrical equipment and electrical system components to be an index of nomenclature for electrical equipment and system components used in identification signs and labels. Use same designations indicated on Drawings.

G. Delegated-Design Submittal: For arc-flash hazard study.

H. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with ASME A13.1and IEEE C2.

B. Comply with NFPA 70.

C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.

D. Comply with ANSI Z535.4 for safety signs and labels.

E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

1. Temperature Change:120 deg F, ambient; 180 deg F, material surfaces.

2.2 COLOR AND LEGEND REQUIREMENTS

A. Raceways and Cables Carrying Circuits at 600 V or Less:

1. Black letters on an orange field.
2. Legend: Indicate voltage and system or service type.

B. Color-Coding for Phase and Voltage-Level Identification, 600 V or Less: Use colors listed below for ungrounded service, feeder, and branch-circuit conductors.

1. Color shall be factory applied or field applied for sizes larger than No. 8 AWG if authorities having jurisdiction permit.
2. Colors for 208/120-V Circuits:

a. Phase A: Black.
b. Phase B: Red.
c. Phase C: Blue.

3. Colors for 240-V Circuits:

a. Phase A: Black.
b. Phase B: Red.

4. Colors for 480/277-V Circuits:

a. Phase A: Brown.
b. Phase B: Orange.
c. Phase C: Yellow.

5. Color for Neutral White or gray.
6. Color for Equipment Grounds: Bare copper, Green, Green with a yellow stripe.
7. Colors for Isolated Grounds: Green with two or more yellow stripes.

C. Raceways and Cables Carrying Circuits at More Than 600 V:

1. Black letters on an orange field.
2. Legend: "DANGER - CONCEALED HIGH VOLTAGE WIRING."

D. Warning Label Colors:

1. Identify system voltage with black letters on an orange background.

E. Identify arc flash hazard with white letters on a black background with orange or yellow border. Warning labels and signs shall include, but are not limited to, the following legends:

1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."

F. Equipment Identification Labels:

1. Black letters on a white field.
2. Circuit Breakers: Identify load served and circuit designation
3. Disconnects: Indicate equipment served, voltage, and circuit number.
4. Panelboards: Identify with panel designation (e.g., "Panel LP1"), voltage, and source.

G. Nameplates:

1. General: Precision engrave letters and numbers with uniform margins, character size minimum 3/16 inch high.

a. Phenolic: Two color laminated engravers stock, 1/16-inch minimum thickness, machine engraved to expose inner core color (white).
b. Aluminum: Standard aluminum alloy plate stock, minimum .032 inches thick, engraved areas enamel filled or background enameled with natural aluminum engraved characters.
c. Materials for Outdoor Applications: As recommended by nameplate manufacturer to suit environmental conditions.

2.3 LABELS

A. Vinyl Wraparound Labels: Preprinted, flexible labels laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Brady Corporation.
b. Panduit Corp.
c. Seton Identification Products; a Brady Corporation company.
d. Or equal.

B. Snap-around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeves, with diameters sized to suit diameters and that stay in place by gripping action.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Brady Corporation.
b. Panduit Corp.
c. Seton Identification Products; a Brady Corporation company.
d. Or equal.

C. Self-Adhesive Wraparound Labels: Preprinted 3-mil- thick, polyester flexible label with acrylic pressure-sensitive adhesive.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Brady Corporation.
b. Ideal Industries, Inc.
c. Thomas & Betts Corp.
d. Or equal.

2. Self-Lamination: Clear; UV-, weather- and chemical-resistant; self-laminating, protective shield over the legend. Labels sized such that the clear shield overlaps the entire printed legend.
3. Marker for Labels:

a.
b. Machine-printed, permanent, waterproof, black ink recommended by printer manufacturer.

4. Minimum Nominal Size:

a. 1-1/2 by 6 inches for raceway and conductors.
b. 3-1/2 by 5 inches for equipment.
c. As required by authorities having jurisdiction.

2.4 BANDS AND TUBES

A. Snap-around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeves, 2 inches long, with diameters sized to suit diameters and that stay in place by gripping action.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Brady Corporation.
    b. HellermannTyton.
    c. Panduit Corp.
    d. Or equal.

B. Heat-Shrink Preprinted Tubes: Flame-retardant polyolefin tubes with machine-printed identification labels, sized to suit diameter and shrunk to fit firmly. Full shrink recovery occurs at a maximum of 200 deg F. Comply with UL 224.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. 3M.
    b. Brady Corporation.
    c. Panduit Corp.
    d. Or equal.

2.5 TAPES AND STENCILS

A. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. HellermannTyton.
    b. Ideal Industries, Inc.
    c. Panduit Corp.
    d. Or equal.

B. Tape and Stencil: 4-inch- wide black stripes on 10-inch centers placed diagonally over orange background and are 12 inches wide. Stop stripes at legends.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Brimar Industries, Inc.
    b. HellermannTyton.
    c. Seton Identification Products; a Brady Corporation company.
    d. Or equal.

C. Floor Marking Tape: 2-inch- wide, 5-mil pressure-sensitive vinyl tape, with black and white or yellow and black stripes and clear vinyl overlay.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. 3M.
    b. Carlton Industries, LP.
    c. Seton Identification Products; a Brady Corporation company.
    d. Or equal.

D. Underground-Line Warning Tape:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Brady Corporation.
    b. Ideal Industries, Inc.
    c. Seton Identification Products; a Brady Corporation company.
    d. Or equal.

2. Tape:

    a. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical utility lines.
    b. Printing on tape shall be permanent and shall not be damaged by burial operations.
    c. Tape material and ink shall be chemically inert and not subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.

3. Color and Printing:

    a. Comply with ANSI Z535.1, ANSI Z535.2, ANSI Z535.3, ANSI Z535.4, and ANSI Z535.5.
    b. Inscriptions for Red-Colored Tapes: "ELECTRIC LINE, HIGH VOLTAGE".
    c. Inscriptions for Orange-Colored Tapes: "TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE".

4. Tape Type II**:**

    a. Multilayer laminate, consisting of high-density polyethylene scrim coated with pigmented polyolefin; bright colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.
    b. Width: 3 inches.
    c. Thickness: 12 mils.
    d. Weight: 36.1 lb/1000 sq. ft.
    e. Tensile according to ASTM D882: 400 lbf and 11,500 psi.

E. Stenciled Legend: In nonfading, waterproof, black ink or paint. Minimum letter height shall be 1 inch.

2.6 TAGS

A. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch, with stamped legend, punched for use with self-locking cable tie fastener.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Brady Corporation.
b. Carlton Industries, LP.
c. Seton Identification Products; a Brady Corporation company.
d. Or equal.

B. Nonmetallic Preprinted Tags: Polyethylene tags, 0.023 inch thick, color-coded for phase and voltage level, with factory screened or printed permanent designations; punched for use with self-locking cable tie fastener.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Brady Corporation.
b. Panduit Corp.
c. Seton Identification Products; a Brady Corporation company.
d. Or equal.

C. Write-on Tags:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Brimar Industries, Inc.
b. Carlton Industries, LP.
c. Seton Identification Products; a Brady Corporation company.
d. Or equal.

2. Polyester Tags: 0.015 inch thick, with corrosion-resistant grommet and cable tie for attachment.
3. Marker for Tags:

a. Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.7 SIGNS

A. Baked-Enamel Signs:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Carlton Industries, LP.
    b. Champion America.
    c. Marking Services, Inc.
    d. Or equal.

2. Preprinted aluminum signs, high intensity reflective punched or drilled for fasteners, with colors, legend, and size required for application.
3. 1/4-inch grommets in corners for mounting.
4. Nominal Size: 7 by 10 inches.

B. Metal-Backed Butyrate Signs:

1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs, with 0.0396-inch galvanized-steel backing, punched and drilled for fasteners, and with colors, legend, and size required for application.
2. 1/4-inch grommets in corners for mounting.
3. Nominal Size: 10 by 14 inches.

C. Laminated Acrylic or Melamine Plastic Signs:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Brady Corporation.
    b. Carlton Industries, LP.
    c. Marking Services, Inc.
    d. Or equal.

2. Engraved legend.
3. Thickness:

    a. For signs up to 20 sq. in., minimum 1/16 inch thick.
    b. For signs larger than 20 sq. in., 1/8 inch thick.
    c. Engraved legend with black letters on white face or white letters on a dark gray background.
    d. Punched or drilled for mechanical fasteners with 1/4-inch grommets in corners for mounting.
    e. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.8 CABLE TIES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. HellermannTyton.
2. Ideal Industries, Inc.
3. Panduit Corp.
4. Or equal.

B. General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.

1. Minimum Width: 3/16 inch.
2. Tensile Strength at 73 Deg F according to ASTM D638: 12,000 psi.
3. Temperature Range: Minus 40 to plus 185 deg F.
4. Color: Black, except where used for color-coding.

C. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.

1. Minimum Width: 3/16 inch.
2. Tensile Strength at 73 Deg F according to ASTM D638: 12,000 psi.
3. Temperature Range: Minus 40 to plus 185 deg F.
4. Color: Black.

D. Plenum-Rated Cable Ties: Self-extinguishing, UV stabilized, one piece, and self-locking.

1. Minimum Width: 3/16 inch.
2. Tensile Strength at 73 Deg F according to ASTM D638: 7000 psi.
3. UL 94 Flame Rating: 94V-0.
4. Temperature Range: Minus 50 to plus 284 deg F.
5. Color: Black.

2.9 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Retain paint system applicable for surface material and location (exterior or interior).

B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 PREPARATION

A. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

3.2 INSTALLATION

A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.

B. Install identifying devices before installing acoustical ceilings and similar concealment.

C. Verify identity of each item before installing identification products.

D. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.

E. Apply identification devices to surfaces that require finish after completing finish work.

F. Install signs with approved legend to facilitate proper identification, operation, and maintenance of electrical systems and connected items.

G. System Identification for Raceways and Cables under 600 V: Identification shall completely encircle cable or conduit. Place identification of two-color markings in contact, side by side.

1. Secure tight to surface of conductor, cable, or raceway.

H. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from the floor.

I. Accessible Fittings for Raceways: Identify the covers of each junction and pull box of the following systems with the wiring system legend and system voltage. System legends shall be as follows:

1. "POWER."
2. "UPS."
3. “FIRE ALARM”

J. Vinyl Wraparound Labels:

1. Secure tight to surface of raceway or cable at a location with high visibility and accessibility.

2. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to the location and substrate.

K. Snap-around Labels: Secure tight to surface at a location with high visibility and accessibility.

L. Snap-around Color-Coding Bands: Secure tight to surface at a location with high visibility and accessibility.

M. Heat-Shrink, Preprinted Tubes: Secure tight to surface at a location with high visibility and accessibility.

N. Marker Tapes: Secure tight to surface at a location with high visibility and accessibility.

O. Tape and Stencil: Comply with requirements in painting Sections for surface preparation and paint application.

P. Floor Marking Tape: Apply stripes to finished surfaces following manufacturer's written instructions.

Q. Underground Line Warning Tape:

1. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.
2. Install underground-line warning tape for direct-buried cables and cables in raceways.

R. Metal Tags:

1. Place in a location with high visibility and accessibility.
2. Secure using UV stabilized cable ties.

S. Nonmetallic Preprinted Tags:

1. Place in a location with high visibility and accessibility.
2. Secure using UV stabilized cable ties.

T. Write-on Tags:

1. Place in a location with high visibility and accessibility.
2. Secure using UV stabilized cable ties.

U. Baked-Enamel Signs:

1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
2. Unless otherwise indicated, provide a single line of text with 1/2-inch- high letters on minimum 1-1/2-inch- high sign; where two lines of text are required, use signs minimum 2 inches high.

V. Metal-Backed Butyrate Signs:

1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
2. Unless otherwise indicated, provide a single line of text with 1/2-inch- high letters on 1-1/2-inch- high sign; where two lines of text are required, use labels 2 inches high.

W. Laminated Acrylic or Melamine Plastic Signs:

1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
2. Unless otherwise indicated, provide a single line of text with 1/2-inch- high letters on 1-1/2-inch- high sign; where two lines of text are required, use labels 2 inches high.

X. Cable Ties: General purpose, for attaching tags, except as listed below:

1. Outdoors: UV-stabilized nylon.
2. In Spaces Handling Environmental Air: Plenum rated.

3.3 IDENTIFICATION SCHEDULE

A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.

B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.

C. Concealed Raceways, Duct Banks, More Than 600 V, within Buildings: Tape and stencil. Stencil legend "DANGER - CONCEALED HIGH-VOLTAGE WIRING" with 3-inch- high, black letters on 20-inch centers.

1. Locate identification at changes in direction, at penetrations of walls and floors, and at 10 feet to 30-feet maximum intervals.

D. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits, More Than 30A and 120V to Ground: Identify with self-adhesive raceway labels or vinyl tape applied in bands.

1. Locate identification at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

E. Accessible Fittings for Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive labels containing the wiring system legend and system voltage. System legends shall be as follows:

1. "POWER."
2. "UPS."

3. ” FIRE ALARM”

F. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use vinyl wraparound labels, snap-around labels, snap-around color-coding bands to identify the phase.

1. Locate identification at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

G. Control-Circuit Conductor Identification: For conductors and cables in pull and junction boxes, manholes, and handholes, use write or tags with the conductor or cable designation, origin, and destination.

H. Control-Circuit Conductor Termination Identification: For identification at terminations, provide heat-shrink preprinted tubes with the conductor designation.

I. Conductors to Be Extended in the Future: Attach write-on tags, marker tape to conductors [and list source].

J. Locations of Underground Lines: Underground-line warning tape for power, lighting, communication, and control wiring and optical-fiber cable.

K. Workspace Indication: Apply floor marking tape or tape and stencil to finished surfaces. Show working clearances in the direction of access to live parts. Workspace shall comply with NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.

L. Instructional Signs: Self-adhesive labels, including the color code for grounded and ungrounded conductors.

M. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive labels, baked enamel warning signs, or Metal backed butyrate warning signs.

1. Apply to exterior of door, cover, or other access.
2. For equipment with multiple power or control sources, apply to door or cover of equipment, including, but not limited to, the following:

a. Fire alarm.

N. Arc Flash Warning Labeling: Self-adhesive labels.

O. Operating Instruction Signs: Self-adhesive labels, baked-enamel warning signs, metal-backed butyrate warning signs, laminated acrylic or melamine plastic signs.

P. Equipment Identification Labels:

1. Indoor Equipment: Self-adhesive labels, baked-enamel warning signs, metal-backed butyrate warning signs, laminated acrylic or melamine plastic signs.
2. Outdoor Equipment: Stenciled legend 4 inches high.
3. Equipment to Be Labeled:

a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be in the form of a engraved, laminated acrylic or melamine label.
b. Enclosures and electrical cabinets.
c. Access doors and panels for concealed electrical items.
d. Switchboards.
e. Motor-control centers.
f. Enclosed switches.
g. Enclosed circuit breakers.

END OF SECTION 260553

SECTION 260573.13 – SHORT-CIRCUIT STUDIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes a computer-based, fault-current study to determine the minimum interrupting capacity of circuit protective devices.

1.3 DEFINITIONS

A. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed and salvaged, or removed and reinstalled. Existing to remain items shall remain functional throughout the construction period.

B. Field Adjusting Agency: An independent electrical testing agency with full-time employees and the capability to adjust devices and conduct testing indicated and that is a member company of NETA.

C. One-Line Diagram: A diagram that shows, by means of single lines and graphic symbols, the course of an electric circuit or system of circuits and the component devices or parts used therein.

D. Power System Analysis Software Developer: An entity that commercially develops, maintains, and distributes computer software used for power system studies.

E. Power Systems Analysis Specialist: Professional engineer in charge of performing the study and documenting recommendations, licensed in the state where Project is located.

F. Protective Device: A device that senses when an abnormal current flow exists and then removes the affected portion of the circuit from the system.

G. SCCR: Short-circuit current rating.

H. Service: The conductors and equipment for delivering electric energy from the serving utility to the wiring system of the premises served.

I. Single-Line Diagram: See "One-Line Diagram."

1.4 ACTION SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data:

1. For computer software program to be used for studies.
2. Submit the following after the approval of system protective devices submittals. Submittals shall] be in digital form.

    a. Short-circuit study input data, including completed computer program input data sheets.
    b. Short-circuit study and equipment evaluation report; signed, dated, and sealed by a qualified professional engineer.

        1) Submit study report for action prior to receiving final approval of distribution equipment submittals. If formal completion of studies will cause delay in equipment manufacturing, obtain approval from director's representative for preliminary submittal of sufficient study data to ensure that selection of devices and associated characteristics is satisfactory.
        2) Revised one-line diagram, reflecting field investigation results and results of short-circuit study.

E. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

F. Qualification Data:

1. For Power Systems Analysis Software Developer.
2. For Power System Analysis Specialist.
3. For Field Adjusting Agency.

G. Product Certificates: For short-circuit study software, certifying compliance with IEEE 399.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data:

1. For overcurrent protective devices to include in emergency, operation, and maintenance manuals.
2. The following are from the Short-Circuit Study Report:

    a. Final one-line diagram.
    b. Final Short-Circuit Study Report.

c. Short-circuit study data files.
d. Power system data.

1.6 QUALITY ASSURANCE

A. Study shall be performed using commercially developed and distributed software designed specifically for power system analysis.

B. Software algorithms shall comply with requirements of standards and guides specified in this Section.

C. Manual calculations are unacceptable.

1. Power System Analysis Software Qualifications: Computer program shall be designed to perform short-circuit studies or have a function, component, or add-on module designed to perform short-circuit studies.
2. Computer program shall be developed under the charge of a licensed professional engineer who holds IEEE Computer Society's Certified Software Development Professional certification.

D. Power Systems Analysis Specialist Qualifications: Professional engineer licensed in the state where Project is located. All elements of the study shall be performed under the direct supervision and control of this professional engineer.

E. Short-Circuit Study Certification: Short-Circuit Study Report shall be signed and sealed by Power Systems Analysis Specialist.

F. Field Adjusting Agency Qualifications:

1. Employer of a NETA ETT-Certified Technician Level III or NICET Electrical Power Testing Level III certification responsible for all field adjusting of the Work.
2. A member company of NETA.
3. Acceptable to authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 POWER SYSTEM ANALYSIS SOFTWARE DEVELOPERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. EasyPower, LLC (formerly ESA Inc.).
2. Power Analytics, Corporation.
3. SKM Systems Analysis, Inc.
4. Or equal.

B. Comply with IEEE 399 and IEEE 551.

1. Analytical features of power systems analysis software program shall have capability to calculate "mandatory," "very desirable," and "desirable" features as listed in IEEE 399.

C. Computer software program shall be capable of plotting and diagramming time-current-characteristic curves as part of its output.

2.2 SHORT-CIRCUIT STUDY REPORT CONTENTS

A. Executive summary of study findings.

B. Study descriptions, purpose, basis, and scope. Include case descriptions, definition of terms, and guide for interpretation of results.

C. One-line diagram of modeled power system, showing the following:

1. Protective device designations and ampere ratings.
2. Conductor types, sizes, and lengths.
3. Transformer kilovolt ampere (kVA) and voltage ratings.
4. Motor and generator designations and kVA ratings.
5. Switchgear, switchboard, motor-control center, and panelboard designations and ratings.
6. Derating factors and environmental conditions.
7. Any revisions to electrical equipment required by the study.

D. Comments and recommendations for system improvements or revisions in a written document, separate from one-line diagram.

E. Protective Device Evaluation:

1. Evaluate equipment and protective devices and compare to available short-circuit currents. Verify that equipment withstand ratings exceed available short-circuit current at equipment installation locations.
2. Tabulations of circuit breaker, fuse, and other protective device ratings versus calculated short-circuit duties.
3. For 600-V overcurrent protective devices, ensure that interrupting ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.
4. For devices and equipment rated for asymmetrical fault current, apply multiplication factors listed in standards to 1/2-cycle symmetrical fault current.
5. Verify adequacy of phase conductors at maximum three-phase bolted fault currents; verify adequacy of equipment grounding conductors and grounding electrode conductors at maximum ground-fault currents. Ensure that short-circuit withstand ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.

F. Short-Circuit Study Input Data:

1. One-line diagram of system being studied.
2. Power sources available.
3. Manufacturer, model, and interrupting rating of protective devices.
4. Conductors.
5. Transformer data.

G. Short-Circuit Study Output Reports:

1. Low-Voltage Fault Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:

    a. Voltage.
    b. Calculated fault-current magnitude and angle.
    c. Fault-point X/R ratio.
    d. Equivalent impedance.

2. Momentary Duty Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:

    a. Voltage.
    b. Calculated symmetrical fault-current magnitude and angle.
    c. Fault-point X/R ratio.
    d. Calculated asymmetrical fault currents:

        1) Based on fault-point X/R ratio.
        2) Based on calculated symmetrical value multiplied by 1.6.
        3) Based on calculated symmetrical value multiplied by 2.7.

3. Interrupting Duty Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:

    a. Voltage.
    b. Calculated symmetrical fault-current magnitude and angle.
    c. Fault-point X/R ratio.
    d. No AC Decrement (NACD) ratio.
    e. Equivalent impedance.
    f. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a symmetrical basis.
    g. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a total basis.

PART 3 - EXECUTION

3.1 POWER SYSTEM DATA

A. Obtain all data necessary for conduct of the study.

1. Verify completeness of data supplied on one-line diagram. Call any discrepancies to Architect's attention.
2. For equipment included as Work of this Project, use characteristics submitted under provisions of action submittals and information submittals for this Project.
3. For equipment that existing to remain, obtain required electrical distribution system data by field investigation and surveys, conducted by qualified technicians and engineers Director’s Representative. Qualifications of technicians and engineers Director’s Representative shall be as defined by NFPA 70E.

B. Gather and tabulate the required input data to support the short-circuit study. Comply with requirements in Section 017839 "Project Record Documents" for recording circuit protective device characteristics. Record data on a Record Document copy of one-line diagram. Comply with recommendations in IEEE 551 as to the amount of detail that is required to be acquired in the field. Field data gathering shall be under direct supervision and control of the engineer Director's Representative in charge of performing the study, and shall be by the engineer Director's Representative or its representative who holds NETA ETT-Certified Technician Level III or NICET Electrical Power Testing Level III certification. Data include, but are not limited to, the following:

1. Product Data for Project's overcurrent protective devices involved in overcurrent protective device coordination studies. Use equipment designation tags that are consistent with electrical distribution system diagrams, overcurrent protective device submittals, input and output data, and recommended device settings.
2. Obtain electrical power utility impedance at the service.
3. Power sources and ties.
4. For transformers, include kVA, primary and secondary voltages, connection type, impedance, X/R ratio, taps measured in percent, and phase shift.
5. For reactors, provide manufacturer and model designation, voltage rating, and impedance.
6. For circuit breakers and fuses, provide manufacturer and model designation. List type of breaker, type of trip, SCCR, current rating, and breaker settings.
7. Generator short-circuit current contribution data, including short-circuit reactance, rated kVA, rated voltage, and X/R ratio.
8. Busway manufacturer and model designation, current rating, impedance, lengths, and conductor material.
9. Motor horsepower and NEMA MG 1 code letter designation.
10. Conductor sizes, lengths, number, conductor material and conduit material (magnetic or nonmagnetic).
11. Derating factors.

3.2 SHORT-CIRCUIT STUDY

A. Perform study following the general study procedures contained in IEEE 399.

B. Calculate short-circuit currents according to IEEE 551.

C. Base study on device characteristics supplied by device manufacturer.

D. Extent of electrical power system to be studied is indicated on Drawings.

E. Begin short-circuit current analysis at the service, extending down to system overcurrent protective devices as follows:

1. To normal system low-voltage load buses where fault current is 10 kA or less.

F. Study electrical distribution system from normal and alternate power sources throughout electrical distribution system for Project. Study all cases of system-switching configurations and alternate operations that could result in maximum fault conditions.

G. Include the ac fault-current decay from induction motors, synchronous motors, and asynchronous generators and apply to low- and medium-voltage, three-phase ac systems. Also account for the fault-current dc decrement to address asymmetrical requirements of interrupting equipment.

H. Calculate short-circuit momentary and interrupting duties for a three-phase bolted fault and a single line-to-ground fault at each equipment indicated on one-line diagram.

1. For grounded systems, provide a bolted line-to-ground fault-current study for areas as defined for the three-phase bolted fault short-circuit study.

I. Include in the report identification of any protective device applied outside its capacity.

END OF SECTION 260573.13

SECTION 260573.16 - COORDINATION STUDIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes computer-based, overcurrent protective device coordination studies to determine overcurrent protective devices and to determine overcurrent protective device settings for selective tripping.

1.3 DEFINITIONS

A. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed, and salvaged, or removed and reinstalled. Existing to remain items shall remain functional throughout the construction period.

B. Field Adjusting Agency: An independent electrical testing agency with full-time employees and the capability to adjust devices and conduct testing indicated and that is a member company of NETA.

C. One-Line Diagram: A diagram that shows, by means of single lines and graphic symbols, the course of an electric circuit or system of circuits and the component devices or parts used therein.

D. Power System Analysis Software Developer: An entity that commercially develops, maintains, and distributes computer software used for power system studies.

E. Power System Analysis Specialist: Professional engineer in charge of performing the study and documenting recommendations, licensed in the state where Project is located.

F. Protective Device: A device that senses when an abnormal current flow exists and then removes the affected portion of the circuit from the system.

G. SCCR: Short-circuit current rating.

H. Service: The conductors and equipment for delivering electric energy from the serving utility to the wiring system of the premises served.

I. Single-Line Diagram: See "One-Line Diagram."

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data:

1. For computer software program to be used for studies.
2. Submit the following after the approval of system protective devices submittals. Submittals shall be in digital form.

    a. Coordination-study input data, including completed computer program input data sheets.
    b. Study and equipment evaluation reports.

3. Overcurrent protective device coordination study report; signed, dated, and sealed by a qualified professional engineer.

    a. Submit study report for action prior to receiving final approval of distribution equipment submittals. If formal completion of studies will cause delay in equipment manufacturing, obtain approval from Engineer for preliminary submittal of sufficient study data to ensure that selection of devices and associated characteristics is satisfactory.

E. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

F. Qualification Data:

1. For Power System Analysis Software Developer.
2. For Power Systems Analysis Specialist.
3. For Field Adjusting Agency.

G. Product Certificates: For overcurrent protective device coordination study software, certifying compliance with IEEE 399.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For overcurrent protective devices to include in emergency, operation, and maintenance manuals.

1. The following are from the Coordination Study Report:

    a. Final one-line diagram.
    b. Final protective device coordination study.

c. Coordination study data files.
d. List of all protective device settings.
e. Time-current coordination curves.
f. Power system data.

1.6 QUALITY ASSURANCE

A. Studies shall be performed using commercially developed and distributed software designed specifically for power system analysis.

B. Software algorithms shall comply with requirements of standards and guides specified in this Section.

C. Manual calculations are unacceptable.

D. Power System Analysis Software Qualifications:

1. Computer program shall be designed to perform coordination studies or have a function, component, or add-on module designed to perform coordination studies.
2. Computer program shall be developed under the charge of a licensed professional engineer who holds IEEE Computer Society's Certified Software Development Professional certification.

E. Power Systems Analysis Specialist Qualifications: Professional engineer licensed in the state where Project is located. All elements of the study shall be performed under the direct supervision and control of this professional engineer.

F. Field Adjusting Agency Qualifications:

1. Employer of a NETA ETT-Certified Technician Level III responsible for all field adjusting of the Work.
2. A member company of NETA.
3. Acceptable to authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 POWER SYSTEM ANALYSIS SOFTWARE DEVELOPERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. EasyPower, LLC (formerly ESA Inc.).
2. Power Analytics, Corporation.
3. SKM Systems Analysis, Inc.
4. Or equal.

B. Comply with IEEE 242 and IEEE 399.

C. Analytical features of device coordination study computer software program shall have the capability to calculate "mandatory," "very desirable," and "desirable" features as listed in IEEE 399.

D. Computer software program shall be capable of plotting and diagramming time-current-characteristic curves as part of its output. Computer software program shall report device settings and ratings of all overcurrent protective devices and shall demonstrate selective coordination by computer-generated, time-current coordination plots.

1. Optional Features:

a. Arcing faults.
b. Simultaneous faults.
c. Explicit negative sequence.
d. Mutual coupling in zero sequence.

2.2 COORDINATION STUDY REPORT CONTENTS

A. Executive summary of study findings.

B. Study descriptions, purpose, basis, and scope. Include case descriptions, definition of terms, and guide for interpretation of results.

C. One-line diagram of modeled power system, showing the following:

1. Protective device designations and ampere ratings.
2. Conductor types, sizes, and lengths.
3. Transformer kilovolt ampere (kVA) and voltage ratings.
4. Motor and generator designations and kVA ratings.
5. Switchgear, switchboard, motor-control center, and panelboard designations.
6. Any revisions to electrical equipment required by the study.
7. Study Input Data: As described in "Power System Data" Article.

D. Protective Device Coordination Study:

1. Report recommended settings of protective devices, ready to be applied in the field. Use manufacturer's data sheets for recording the recommended setting of overcurrent protective devices when available.

a. Circuit Breakers:

1) Adjustable pickups and time delays (long time, short time, and ground).
2) Adjustable time-current characteristic.
3) Adjustable instantaneous pickup.
4) Recommendations on improved trip systems, if applicable.

b. Fuses: Show current rating, voltage, and class.

E. Time-Current Coordination Curves: Determine settings of overcurrent protective devices to achieve selective coordination. Graphically illustrate that adequate time separation exists between

devices installed in series, including power utility company's upstream devices. Prepare separate sets of curves for the switching schemes and for emergency periods where the power source is local generation. Show the following information:

1. Device tag and title, one-line diagram with legend identifying the portion of the system covered.
2. Terminate device characteristic curves at a point reflecting maximum symmetrical or asymmetrical fault current to which the device is exposed.
3. Identify the device associated with each curve by manufacturer type, function, and, if applicable, tap, time delay, and instantaneous settings recommended.
4. Plot the following listed characteristic curves, as applicable:

    a. Power utility's overcurrent protective device.
    b. Medium-voltage equipment overcurrent relays.
    c. Medium- and low-voltage fuses including manufacturer's minimum melt, total clearing, tolerance, and damage bands.
    d. Low-voltage equipment circuit-breaker trip devices, including manufacturer's tolerance bands.
    e. Transformer full-load current, magnetizing inrush current, and ANSI through-fault protection curves.
    f. Cables and conductors damage curves.
    g. Ground-fault protective devices.
    h. Motor-starting characteristics and motor damage points.
    i. Generator short-circuit decrement curve and generator damage point.
    j. The largest feeder circuit breaker in each motor-control center and panelboard.

5. Maintain selectivity for tripping currents caused by overloads.
6. Maintain maximum achievable selectivity for tripping currents caused by overloads on series-rated devices.
7. Provide adequate time margins between device characteristics such that selective operation is achieved.
8. Comments and recommendations for system improvements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine Project overcurrent protective device submittals for compliance with electrical distribution system coordination requirements and other conditions affecting performance of the Work. Devices to be coordinated are indicated on Drawings.

1. Proceed with coordination study only after relevant equipment submittals have been assembled. Overcurrent protective devices that have not been submitted and approved prior to coordination study may not be used in study.

3.2 POWER SYSTEM DATA

A. Obtain all data necessary for conduct of the overcurrent protective device study.

1. Verify completeness of data supplied in one-line diagram on Drawings. Call any discrepancies to director representative's attention.
2. For equipment included as Work of this Project, use characteristics submitted under provisions of action submittals and information submittals for this Project.
3. For equipment that is existing to remain, obtain required electrical distribution system data by field investigation and surveys, conducted by qualified technicians and engineers. Qualifications of technicians and engineers shall be as defined by NFPA 70E.

B. Gather and tabulate all required input data to support the coordination study. List below is a guide. Comply with recommendations in IEEE 551 for the amount of detail required to be acquired in the field. Field data gathering shall be under direct supervision and control of the engineer Director's Representative in charge of performing the study and shall be by the engineer Director's Representative or its representative who holds NETA ETT-Certified Technician Level III or NICET Electrical Power Testing Level III certification. Data include, but are not limited to, the following:

1. Product Data for overcurrent protective devices specified in other Sections and involved in overcurrent protective device coordination studies. Use equipment designation tags that are consistent with electrical distribution system diagrams, overcurrent protective device submittals, input and output data, and recommended device settings.
2. Electrical power utility impedance at the service.
3. Power sources and ties.
4. Short-circuit current at each system bus (three phase and line to ground).
5. Full-load current of all loads.
6. Voltage level at each bus.
7. For transformers, include kVA, primary and secondary voltages, connection type, impedance, X/R ratio, taps measured in percent, and phase shift.
8. For reactors, provide manufacturer and model designation, voltage rating, and impedance.
9. For circuit breakers and fuses, provide manufacturer and model designation. List type of breaker, type of trip and available range of settings, SCCR, current rating, and breaker settings.
10. Generator short-circuit current contribution data, including short-circuit reactance, rated kVA, rated voltage, and X/R ratio.
11. For relays, provide manufacturer and model designation, current transformer ratios, potential transformer ratios, and relay settings.
12. Maximum demands from service meters.
13. Busway manufacturer and model designation, current rating, impedance, lengths, size, and conductor material.
14. Motor horsepower and NEMA MG 1 code letter designation.
15. Low-voltage cable sizes, lengths, number, conductor material, and conduit material (magnetic or nonmagnetic).
16. Medium-voltage cable sizes, lengths, conductor material, cable construction, metallic shield performance parameters, and conduit material (magnetic or nonmagnetic).
17. Data sheets to supplement electrical distribution system one-line diagram, cross-referenced with tag numbers on diagram, showing the following:

    a. Special load considerations, including starting inrush currents and frequent starting and stopping.
    b. Transformer characteristics, including primary protective device, magnetic inrush current, and overload capability.

c. Motor full-load current, locked rotor current, service factor, starting time, type of start, and thermal-damage curve.
d. Generator thermal-damage curve.
e. Ratings, types, and settings of utility company's overcurrent protective devices.
f. Special overcurrent protective device settings or types stipulated by utility company.
g. Time-current-characteristic curves of devices indicated to be coordinated.
h. Manufacturer, frame size, interrupting rating in amperes root mean square (rms) symmetrical, ampere or current sensor rating, long-time adjustment range, short-time adjustment range, and instantaneous adjustment range for circuit breakers.
i. Manufacturer and type, ampere-tap adjustment range, time-delay adjustment range, instantaneous attachment adjustment range, and current transformer ratio for overcurrent relays.
j. Switchgear, switchboards, motor-control centers, and panelboards ampacity, and SCCR in amperes rms symmetrical.
k. Identify series-rated interrupting devices for a condition where the available fault current is greater than the interrupting rating of downstream equipment. Obtain device data details to allow verification that series application of these devices complies with NFPA 70 and UL 489 requirements.

3.3 COORDINATION STUDY

A. Comply with IEEE 242 for calculating short-circuit currents and determining coordination time intervals.

B. Comply with IEEE 399 for general study procedures.

C. Base study on device characteristics supplied by device manufacturer.

D. Extent of electrical power system to be studied is indicated on Drawings.

E. Begin analysis at the service, extending down to system overcurrent protective devices as follows:

1. To normal system low-voltage load buses where fault current is 10 kA or less.

F. Study electrical distribution system from normal and alternate power sources throughout electrical distribution system for Project. Study all cases of system-switching configurations and alternate operations that could result in maximum fault conditions.

G. Transformer Primary Overcurrent Protective Devices:

1. Device shall not operate in response to the following:

a. Inrush current when first energized.
b. Self-cooled, full-load current or forced-air-cooled, full-load current, whichever is specified for that transformer.
c. Permissible transformer overloads according to IEEE C57.96 if required by unusual loading or emergency conditions.

2. Device settings shall protect transformers according to IEEE C57.12.00, for fault currents.

H. Motor Protection:

1. Select protection for low-voltage motors according to IEEE 242 and NFPA 70.
2. Select protection for motors served at voltages more than 600 V according to IEEE 620.

I. Conductor Protection: Protect cables against damage from fault currents according to ICEA P-32-382, ICEA P-45-482, and protection recommendations in IEEE 242. Demonstrate that equipment withstands the maximum short-circuit current for a time equivalent to the tripping time of the primary relay protection or total clearing time of the fuse. To determine temperatures that damage insulation, use curves from cable manufacturers or from listed standards indicating conductor size and short-circuit current.

J. Generator Protection: Select protection according to manufacturer's written instructions and to IEEE 242.

K. Include the ac fault-current decay from induction motors, synchronous motors, and asynchronous generators and apply to low- and medium-voltage, three-phase ac systems. Also account for fault-current dc decrement, to address asymmetrical requirements of interrupting equipment.

L. Calculate short-circuit momentary and interrupting duties for a three-phase bolted fault and a single line-to-ground fault at each equipment indicated on one-line diagram.

1. For grounded systems, provide a bolted line-to-ground fault-current study for areas as defined for the three-phase bolted fault short-circuit study.

M. Protective Device Evaluation:

1. Evaluate equipment and protective devices and compare to short-circuit ratings.
2. Adequacy of switchgear, motor-control centers, and panelboard bus bars to withstand short-circuit stresses.
3. Any application of series-rated devices shall be recertified, complying with requirements in NFPA 70.
4. Include in the report identification of any protective device applied outside its capacity.

3.4 FIELD ADJUSTING

A. Adjust relay and protective device settings according to recommended settings provided by the coordination study. Field adjustments shall be completed by the engineering service division of equipment manufacturer under the "Startup and Acceptance Testing" contract portion.

B. Make minor modifications to equipment as required to accomplish compliance with short circuit and protective device coordination studies.

C. Testing and adjusting shall be by a full-time employee of the Field Adjusting Agency, who holds NETA ETT-Certified Technician Level III or NICET Electrical Power Testing Level III certification.

1. Perform each visual and mechanical inspection and electrical test stated in NETA ATS. Certify compliance with test parameters. Perform NETA tests and inspections for all adjustable overcurrent protective devices.

3.5 DEMONSTRATION

A. Engage Power Systems Analysis Specialist to train Director’s Representative's maintenance personnel in the following:

1. Acquaint personnel in fundamentals of operating the power system in normal and emergency modes.
2. Hand-out and explain the coordination study objectives, study descriptions, purpose, basis, and scope. Include case descriptions, definition of terms, and guide for interpreting time-current coordination curves.
3. For Director’s Representative's maintenance staff certified as NETA ETT-Certified Technicians Level III or NICET Electrical Power Testing Level III Technicians, teach how to adjust, operate, and maintain overcurrent protective device settings.

END OF SECTION 260573.16

SECTION260573.19 – ARC-FLASH HAZARD ANALYSIS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes a computer-based, arc-flash study to determine the arc-flash hazard distance and the incident energy to which personnel could be exposed during work on or near electrical equipment.

1.3 DEFINITIONS

A. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

B. Field Adjusting Agency: An independent electrical testing agency with full-time employees and the capability to adjust devices and conduct testing indicated and that is a member company of NETA.

C. One-Line Diagram: A diagram that shows, by means of single lines and graphic symbols, the course of an electric circuit or system of circuits and the component devices or parts used therein.

D. Power System Analysis Software Developer: An entity that commercially develops, maintains, and distributes computer software used for power system studies.

E. Power Systems Analysis Specialist: Professional engineer in charge of performing the study and documenting recommendations, licensed in the state where Project is located.

F. Protective Device: A device that senses when an abnormal current flow exists and then removes the affected portion from the system.

G. SCCR: Short-circuit current rating.

H. Service: The conductors and equipment for delivering electric energy from the serving utility to the wiring system of the premises served.

I. Single-Line Diagram: See "One-Line Diagram."

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For computer software program to be used for studies.

E. Study Submittals: Submit the following submittals after the approval of system protective devices submittals. Submittals shall be in digital form:

1. Arc-flash study input data, including completed computer program input data sheets.
2. Arc-flash study report; signed, dated, and sealed by Power Systems Analysis Specialist.
3. Submit study report for action prior to receiving final approval of distribution equipment submittals. If formal completion of studies will cause delay in equipment manufacturing, obtain approval from Architect for preliminary submittal of sufficient study data to ensure that selection of devices and associated characteristics is satisfactory.

F. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

G. Qualification Data:

1. For Power Systems Analysis Software Developer.
2. For Power System Analysis Specialist.
3. For Field Adjusting Agency.

H. Product Certificates: For arc-flash hazard analysis software, certifying compliance with IEEE 1584 and NFPA 70E.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data:

1. Provide maintenance procedures in equipment manuals according to requirements in NFPA 70E.

1.6 QUALITY ASSURANCE

A. Study shall be performed using commercially developed and distributed software designed specifically for power system analysis.

B. Software algorithms shall comply with requirements of standards and guides specified in this Section.

C. Manual calculations are unacceptable.

D. Power System Analysis Software Qualifications: An entity that owns and markets computer software used for studies, having performed successful studies of similar magnitude on electrical distribution systems using similar devices.

1. Computer program shall be designed to perform arc-flash analysis or have a function, component, or add-on module designed to perform arc-flash analysis.
2. Computer program shall be developed under the charge of a licensed professional engineer who holds IEEE Computer Society's Certified Software Development Professional certification.

E. Power Systems Analysis Specialist Qualifications: Professional engineer in charge of performing the arc-flash study, analyzing the arc flash, and documenting recommendations, licensed in the state where Project is located. All elements of the study shall be performed under the direct supervision and control of this professional engineer.

F. Arc-Flash Study Certification: Arc-Flash Study Report shall be signed and sealed by Power Systems Analysis Specialist.

G. Field Adjusting Agency Qualifications:

1. Employer of a NETA ETT-Certified Technician Level III or NICET Electrical Power Testing Level III certification responsible for all field adjusting of the Work.
2. A member company of NETA.
3. Acceptable to authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 COMPUTER SOFTWARE DEVELOPERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. EasyPower, LLC (formerly ESA Inc.).
2. Eaton CYME.
3. SKM Systems Analysis, Inc.
4. Or equal.

B. Comply with IEEE 1584 and NFPA 70E.

C. Analytical features of device coordination study computer software program shall have the capability to calculate "mandatory," "very desirable," and "desirable" features as listed in IEEE 399.

2.2 ARC-FLASH STUDY REPORT CONTENT

A. Executive summary of study findings.

B. Study descriptions, purpose, basis, and scope. Include case descriptions, definition of terms, and guide for interpretation of results.

C. One-line diagram, showing the following:

1. Protective device designations and ampere ratings.
2. Conductor types, sizes, and lengths.
3. Motor and generator designations and kVA ratings.
4. switchboard, panelboard designations, and ratings.

D. Study Input Data: As described in "Power System Data" Article.

E. Short-Circuit Study Output Data: As specified in "Short-Circuit Study Output Reports" Paragraph in "Short-Circuit Study Report Contents" Article in Section 260573.13 "Short-Circuit Studies."

F. Protective Device Coordination Study Report Contents: As specified in "Coordination Study Report Contents" Article in Section 260573.16 "Coordination Studies."

G. Arc-Flash Study Output Reports:

1. Interrupting Duty Report: Three-phase and unbalanced fault calculations, showing the following for each equipment location included in the report:

a. Voltage.
b. Calculated symmetrical fault-current magnitude and angle.
c. Fault-point X/R ratio.
d. No AC Decrement (NACD) ratio.
e. Equivalent impedance.
f. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a symmetrical basis.
g. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a total basis.

H. Incident Energy and Flash Protection Boundary Calculations:

1. Arcing fault magnitude.
2. Protective device clearing time.
3. Duration of arc.
4. Arc-flash boundary.
5. Restricted approach boundary.
6. Limited approach boundary.
7. Working distance.
8. Incident energy.
9. Hazard risk category.
10. Recommendations for arc-flash energy reduction.

I. Fault study input data, case descriptions, and fault-current calculations including a definition of terms and guide for interpretation of computer printout.

2.3 ARC-FLASH WARNING LABELS

A. Produce a 3.5-by-5-inch self-adhesive equipment label for each work location included in the analysis.

B. Label shall have an orange header with the wording, "WARNING, ARC-FLASH HAZARD," and shall include the following information taken directly from the arc-flash hazard analysis:

1. Location designation.
2. Nominal voltage.
3. Protection boundaries.

    a. Arc-flash boundary.
    b. Restricted approach boundary.
    c. Limited approach boundary.

4. Arc flash PPE category.
5. Required minimum arc rating of PPE in Cal/cm squared.
6. Available incident energy.
7. Working distance.
8. Engineering report number, revision number, and issue date.

C. Labels shall be machine printed, with no field-applied markings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine Project overcurrent protective device submittals. Proceed with arc-flash study only after relevant equipment submittals have been assembled. Overcurrent protective devices that have not been submitted and approved prior to arc-flash study may not be used in study.

3.2 ARC-FLASH HAZARD ANALYSIS

A. Comply with NFPA 70E and its Annex D for hazard analysis study.

B. Preparatory Studies: Perform the Short circuit and Protective device coordinations studies prior to starting the Arc-Flash Hazard Analysis**.**

C. Calculate maximum and minimum contributions of fault-current size.

1. Maximum calculation shall assume a maximum contribution from the utility and shall assume motors to be operating under full-load conditions.
2. Calculate arc-flash energy at 85 percent of maximum short-circuit current according to IEEE 1584 recommendations.
3. Calculate arc-flash energy at 38 percent of maximum short-circuit current according to NFPA 70E recommendations.

4. Calculate arc-flash energy with the utility contribution at a minimum and assume no motor contribution.

D. Calculate the arc-flash protection boundary and incident energy at locations in electrical distribution system where personnel could perform work on energized parts.

E. Include medium- and low-voltage equipment locations, except equipment rated 240 V ac or less fed from transformers less than 125 kVA.

F. Calculate the limited, restricted, and prohibited approach boundaries for each location.

G. Incident energy calculations shall consider the accumulation of energy over time when performing arc-flash calculations on buses with multiple sources. Iterative calculations shall take into account the changing current contributions, as the sources are interrupted or decremented with time. Fault contribution from motors and generators shall be decremented as follows:

1. Fault contribution from induction motors shall not be considered beyond three to five cycles.
2. Fault contribution from synchronous motors and generators shall be decayed to match the actual decrement of each as closely as possible (for example, contributions from permanent magnet generators will typically decay from 10 per unit to three per unit after 10 cycles).

H. Arc-flash energy shall generally be reported for the maximum of line or load side of a circuit breaker. However, arc-flash computation shall be performed and reported for both line and load side of a circuit breaker as follows:

1. When the circuit breaker is in a separate enclosure.
2. When the line terminals of the circuit breaker are separate from the work location.

I. Base arc-flash calculations on actual overcurrent protective device clearing time. Cap maximum clearing time at two seconds based on IEEE 1584, Section B.1.2.

3.3 POWER SYSTEM DATA

A. Obtain all data necessary for conduct of the arc-flash hazard analysis.

1. Verify completeness of data supplied on one-line diagram on Drawings and under “Preparatory Studies” Paragraph in “Arc-Flash Hazard Analysis” Article.Call discrepancies to directors representative’s attention.
2. For new equipment, use characteristics from approved submittals under provisions of action submittals and information submittals for this Project.
3. For existing equipment, whether or not relocated, obtain required electrical distribution system data by field investigation and surveys conducted by qualified technicians and engineer’s Director’s Representative.

B. Electrical Survey Data: Gather and tabulate the following input data to support study. Comply with recommendations in IEEE 1584 and NFPA 70E as to the amount of detail that is required to be acquired in the field. Field data gathering shall be under the direct supervision and control of the engineer Director’s Representative in charge of performing the study and shall be by the engineer’s Director’s Representative or its representative who holds NETA ETT-Certified

Technician Level III or NICET Electrical Power Testing Level III certification. Data include, but are not limited to, the following:

1. Product Data for overcurrent protective devices specified in other Sections and involved in overcurrent protective device coordination studies. Use equipment designation tags that are consistent with electrical distribution system diagrams, overcurrent protective device submittals, input and output data, and recommended device settings.
2. Obtain electrical power utility impedance or available short circuit current at the service.
3. Power sources and ties.
4. Short-circuit current at each system bus (three phase and line to ground).
5. Full-load current of all loads.
6. Voltage level at each bus.
7. For transformers, include kVA, primary and secondary voltages, connection type, impedance, X/R ratio, taps measured in percent, and phase shift.
8. For reactors, provide manufacturer and model designation, voltage rating and impedance.
9. For circuit breakers and fuses, provide manufacturer and model designation. List type of breaker, type of trip and available range of settings, SCCR, current rating, and breaker settings.
10. Generator short-circuit current contribution data, including short-circuit reactance, rated kVA, rated voltage, and X/R ratio.
11. For relays, provide manufacturer and model designation, current transformer ratios, potential transformer ratios, and relay settings.
12. Busway manufacturer and model designation, current rating, impedance, lengths, size, and conductor material.
13. Motor horsepower and NEMA MG 1 code letter designation.
14. Low-voltage conductor sizes, lengths, number, conductor material and conduit material (magnetic or nonmagnetic).
15. Medium-voltage conductor sizes, lengths, conductor material, conductor construction and metallic shield performance parameters, and conduit material (magnetic or nonmagnetic).

3.4 LABELING

A. Apply one Arch-flash label on the front cover for each equipment included in the study. Base arc-flash label data on highest values calculated at each location.

B. Each piece of equipment listed below shall have an arc-flash label applied to it:

1. Low-voltage switchboard.
2. Panelboard and safety switch over 250 V.
3. Applicable panelboard and safety switch under 250 V.
4. Control panel.

C. Note on record Drawings the location of equipment where the personnel could be exposed to arc-flash hazard during their work.

1. Indicate arc-flash energy.
2. Indicate protection level required.

3.5 APPLICATION OF WARNING LABELS

A. Install arc-flash warning labels under the direct supervision and control of Power System Analysis Specialist.

3.6 DEMONSTRATION

A. Engage Power Systems Analysis Specialist to train Director’s Representative's maintenance personnel in potential arc-flash hazards associated with working on energized equipment and the significance of arc-flash warning labels.

END OF SECTION 260573.19

SECTION 260800 - COMMISSIONING OF ELECTRICAL

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Description.

B. Responsibilities.

C. Related Work.

D. Test Equipment.

1.2 DESCRIPTION

A. The purpose of this section is to specify Division 26 responsibilities in the commissioning process.

B. The systems to be commissioned are listed in Section 019113.

C. Commissioning requires the participation of the Division 26 Contractor to ensure that all systems are operating in a manner consistent with the Contract Documents. The general commissioning requirements and coordination are detailed in Section 019113. Division 26 Contractor shall be familiar with all parts of Section 019113 and shall execute all commissioning responsibilities assigned to them in the Contract Documents.

1.3 RESPONSIBILITIES

A. Refer to Section 019113.

1.4 RELATED WORK

A. Specific commissioning requirements are given in the following sections of these specifications. All the following sections apply to the Work of this section.

1. Section 017823 - Operations and Maintenance.
2. Section 017900 - Demonstration and Training.
3. Section 019113 – Commissioning.
4. Section 210800 – Commissioning of Fire Suppression.
5. Section 220800 - Commissioning of Plumbing.
6. Section 230800 - Commissioning of HVAC.

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

A. The Contractor shall provide (as required) all test equipment necessary to fulfill the testing requirements of this Division. This equipment includes, but is not limited to, the following:

1. Test equipment required for NETA Acceptance Testing.
2. Light meter.
3. Sound level meter.
4. Digital multimeter capable of measuring voltage (AC/DC), current, and resistance.
5. Power quality and energy analyzer capable of capturing waveform (3 phase) and data recording.
6. Handheld thermal imaging camera.

B. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the related specifications. All equipment shall be calibrated according to the manufacturer's recommended intervals and when dropped or damaged. Calibration tags shall be affixed or certificates readily available.

C. Commissioned Electrical systems shall include:

1. (32) Zones Occupancy / Vacancy Sensors

D. Refer to Section 019113 for additional Division 26 requirements.

PART 3 - EXECUTION

A. Refer to Section 019113.

END OF SECTION

SECTION 260923 - LIGHTING CONTROL DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Outdoor photoelectric switches, solid state, luminaire-mounted.
2. Outdoor photoelectric switches, low voltage.
3. Daylight-harvesting switching controls.
4. Daylight-harvesting dimming controls, digital.
5. Room lighting controller
6. Indoor occupancy and vacancy sensors.
7. Switchbox-mounted occupancy sensors.
8. Outdoor motion sensors.
9. Lighting contactors.
10. Conductors and cables.

1.3 Related Requirements:

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Product Data: For each type of product.

D. Shop Drawings:

1. Show installation details for the following:

a. Occupancy sensors.
b. Vacancy sensors.

2. Interconnection diagrams showing field-installed wiring.
3. Include diagrams for power, signal, and control wiring.

E. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

F. Coordination Drawings: Reflected ceiling plan(s) and elevations, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Suspended ceiling components.
2. Structural members to which equipment will be attached.
3. Items penetrating finished ceiling, including the following:

a. Luminaires.
b. Air outlets and inlets.
c. Speakers.
d. Sprinklers.
e. Access panels.
f. Control modules.

G. Field quality-control reports.

H. Sample Warranty: For manufacturer's warranties.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For each type of lighting control device to include in operation and maintenance manuals.

B. Software and Firmware Operational Documentation:

1. Software operating and upgrade manuals.
2. Program Software Backup: On USB media or manufacturer’s website. Provide names, versions, and website addresses for locations of installed software.
3. Device address list.
4. Printout of software application and graphic screens.

1.5 WARRANTY

A. Manufacturer's Warranty: Manufacturer and Installer agree to repair or replace lighting control devices that fail(s) in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Faulty operation of lighting control software.
b. Faulty operation of lighting control devices.

2. Warranty Period: 5years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 OUTDOOR PHOTOELECTRIC SWITCHES, SOLID STATE, LUMINAIRE-MOUNTED

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Intermatic, Inc.
2. Leviton Manufacturing Co., Inc.
3. NSI Industries (Tork).
4. Lutron.
5. Or equal.

B. Description: Solid state, with SPST dry contacts rated for 1800-VA inductive, to operate connected load, complying with UL 773, and compatible with CFL and LED lamps.

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Light-Level Monitoring Range: 1.5 to 10 fc (16.14 to 108 lux), with an adjustment for turn-on and turn-off levels within that range.
3. Time Delay: Thirty-second minimum, to prevent false operation.
4. Lightning Arrester: Air-gap type.
5. Mounting: Twist lock complying with ANSI C136.10, with base From same source and manufacture as switch.
6. Failure Mode: Luminaire stays ON.

2.2 OUTDOOR PHOTOELECTRIC SWITCHES, LOW VOLTAGE

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Intermatic, Inc.
2. Leviton Manufacturing Co., Inc.
3. NSI Industries (Tork).

B. Description: Solid state; one set of NO dry contacts rated for 24 V dc at 1 A, to operate connected load, complying with UL 773, and compatible with power pack**.**

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Light-Level Monitoring Range: 1.5 to 10 fc (16.14 to 108 lux), with an adjustment for turn-on and turn-off levels within that range.
3. Time Delay: Thirty-second minimum, to prevent false operation.
4. Mounting: 1/2-inch (13-mm) threaded male conduit.
5. Failure Mode: Luminaire stays ON.

6. Power Pack:

a. Dry contacts rated for 20-ALED load at 120- and 277-V ac, for 13-Atungsten at 120-V ac, and for 1 hpat 120-V ac. Sensor has 24-V dc, 150-mA, Class 2 power source, as defined by NFPA 70.

1) LED status lights to indicate load status.
2) Plenum rated.

b. Digital controller capable of accepting three RJ45 inputs with oneoutputs rated LED load at 120- and 277-V ac, for 16-A LED at 120- and 277-V ac, and for 1 hp at 120-V ac. Sensor has 24-V dc, Class 2 power source, as defined by NFPA 70.

1) With integral current monitoring.
2) Compatible with digital addressable lighting interface.
3) Plenum rated.

2.3 DAYLIGHT-HARVESTING SWITCHING CONTROLS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Hubbell Control Solutions; Hubbell Incorporated, Lighting.
2. Leviton Manufacturing Co., Inc.
3. Lithonia Lighting; Acuity Brands Lighting, Inc
4. Lutron.
5. Or equal.

B. Description: System operates indoor lighting.

C. Sequence of Operation: As daylight increases, the lights are turned off at a predetermined level. As daylight decreases, the lights are turned on at a predetermined level.

1. Lighting control set point is based on two lighting conditions:

a. When no daylight is present.
b. When significant daylight is present (target level).
c. System programming is done with two hand-held, remote-control tools.

D. Ceiling-Mounted Switching Controls:

1. Solid-state, light-level sensor unit, with separate power pack that detects changes in indoor lighting levels that are perceived by the eye.

E. Electrical Components, Devices, and Accessories:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Operating Ambient Conditions: Dry interior conditions, 32 to 120 deg F (0 to 49 deg C).
3. Sensor Output:

a. Contacts rated to operate the associated power pack, complying with UL 773A. Sensor shall be powered by the power pack.

4. Sensor type: Closed loop.
5. Zone: Multi.
6. Power Pack:

a. Digital controller capable of accepting 34 <Insert number> RJ45 inputs with oneoutputs rated for 20-A LED load at 120- and 277-V ac, for 16-A LEDat 120- and 277-V ac, and for 1 hp at 120-V ac. Sensor has 24-V dc Class 2 power source, as defined by NFPA 70.

1) With integral current monitoring
2) Compatible with digital addressable lighting interface.
3) Plenum rated.

7. General Space Sensors Light-Level Monitoring Range: 10 to 200 fc (108 to 2152 lux), with an adjustment for turn-on and turn-off levels within that range.
8. Atrium Space Sensors Light-Level Monitoring Range: 100 to 1000 fc (1080 to 10 800 lux), with an adjustment for turn-on and turn-off levels within that range.
9. Skylight Sensors Light-Level Monitoring Range: 1000 to 10,000 fc (10 800 to 108 000 lux), with an adjustment for turn-on and turn-off levels within that range.
10. Time Delay: Adjustable from 5 to 300 seconds to prevent cycling.
11. Set-Point Adjustment: Equip with deadband adjustment of 25, 50, and 75 percent above the "on" set point, or provide with separate adjustable "on" and "off" set points.
12. Test Mode: User selectable, overriding programmed time delay to allow settings check.
13. Control Load Status: User selectable to confirm that load wiring is correct.
14. Indicator: Two digital displays to indicate the beginning of on-off cycles.

2.4 DAYLIGHT-HARVESTING DIMMING CONTROLS, DIGITAL

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Hubbell Control Solutions; Hubbell Incorporated, Lighting.
2. Leviton Manufacturing Co., Inc.
3. Lithonia Lighting; Acuity Brands Lighting, Inc.
4. Lutron.
5. Or equal.

B. Description: Sensing daylight and electrical lighting levels, the system adjusts the indoor electrical lighting levels. As daylight increases, lights are dimmed.

1. Lighting control set point is based on the following two lighting conditions:

a. When no daylight is present (target level).
b. When significant daylight is present.

2. System programming is done with two hand-held, remote-control tools.

a. Initial setup tool.
b. Tool for occupants to adjust the target levels by increasing the set point up to 25 percent, or by minimizing the electric lighting level.

C. Ceiling-Mounted Dimming Controls: Solid-state, light-level sensor unit, with power pack, to detect changes in indoor lighting levels that are perceived by the eye.

D. Electrical Components, Devices, and Accessories:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Sensor Output: zero- to 10-V dc to operate luminaires. Sensor is powered by controller unit.
3. Light-Level Sensor Set-Point Adjustment Range: 20 to 60 fc (120 to 640 lux).

E. Power Pack: Digital controller capable of accepting threeRJ45 inputs with one output(s) rated for 20-ALED load at 120- and 277-V ac, for 16-A LED at 120- and 277-V ac, and for 1 hp at 120-V ac. Sensor has 24-V dc Class 2 power source, as defined by NFPA 70.

1. With integral current monitoring.
2. Compatible with digital addressable lighting interface.
3. Plenum rated.

2.5 ROOM LIGHTING CONTROLLER

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Cooper Lighting.
2. Leviton Manufacturing Co.
3. Sensor Switch, Inc.; Acuity Brands Lighting, Inc.
4. WattStopper; Legrand North America, LLC.
5. Lutron.
6. Or equal.

B. General requirements for room lighting controllers:

1. Digital controller capable of accepting 3 RJ45 inputs with oneoutput rated for 20-A LED load at 120- and 277-V ac. Controller has 24-V dc Class 2 power source, as defined by NFPA 70.
2. Class 2 dimming control signal: 0-10VDV.
3. Relay for plug load control.
4. UL 924 relay is for automatic emergency lighting control.

2.6 INDOOR OCCUPANCY AND VACANCY SENSORS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Lutron Electronics Co., Inc.
2. Sensor Switch, Inc.; Acuity Brands Lighting, Inc.
3. WattStopper; Legrand North America, LLC.
4. Or equal.

B. General Requirements for Sensors:

1. Ceiling-mounted, solid-state indoor occupancy and vacancy]sensors.
2. Dual technology.
3. Separate power pack.
4. Hardwired connection to switch.
5. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
6. Operation:

    a. Occupancy Sensor: Unless otherwise indicated, turn lights on when coverage area is occupied, and turn them off when unoccupied; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.
    b. Vacancy Sensor: Unless otherwise indicated, lights are manually turned on and sensor turns lights off when the room is unoccupied; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.
    c. Combination Sensor: Unless otherwise indicated, sensor shall be programmed to turn lights on when coverage area is occupied and turn them off when unoccupied, or to turn off lights that have been manually turned on; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.

7. Sensor Output: Sensor is powered from the power pack.
8. Power: Line voltage.
9. Power Pack: Dry contacts rated for 20-A LED load at 120- and 277-V ac, for 13-A tungsten at 120-V ac, and for 1 hp at 120-V ac. Sensor has 24-V dc, 150-mA, Class 2 power source, as defined by NFPA 70.
10. Mounting:

    a. Sensor: Suitable for mounting in any position on a standard outlet box.
    b. Relay: Externally mounted through a 1/2-inch (13-mm) knockout in a standard electrical enclosure.
    c. Time-Delay and Sensitivity Adjustments: Recessed and concealed behind hinged door.

11. Indicator: Digital display, to show when motion is detected during testing and normal operation of sensor.
12. Bypass Switch: Override the "on" function in case of sensor failure.
13. Automatic Light-Level Sensor: Adjustable from 2 to 200 fc (21.5 to 2152 lux); turn lights off when selected lighting level is present.

C. Dual-Technology Type: Ceiling mounted; detect occupants in coverage area using PIR and ultrasonic detection methods. The particular technology or combination of technologies that control on-off functions is selectable in the field by operating controls on unit.

1. Sensitivity Adjustment: Separate for each sensing technology.

2. Detector Sensitivity: Detect occurrences of 6-inch- (150-mm-) minimum movement of any portion of a human body that presents a target of not less than 36 sq. in. (232 sq. cm) and detect a person of average size and weight moving not less than 12 inches (305 mm) in either a horizontal or a vertical manner at an approximate speed of 12 inches/s (305 mm/s).
3. Detection Coverage (Standard Room): Detect occupancy anywhere within a circular area of 1000 sq. ft. (93 sq. m) when mounted on a 96-inch- (2440-mm-) high ceiling.
4. Detection Coverage (Room, Wall Mounted): Detect occupancy anywhere within a 180-degree pattern centered on the sensor over an area of 1000 square feet when mounted 48 inches above finished floor.

2.7 SWITCHBOX-MOUNTED OCCUPANCY SENSORS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Lutron Electronics Co., Inc.
2. Sensor Switch, Inc.; Acuity Brands Lighting, Inc.
3. WattStopper; Legrand North America, LLC.
4. Lutron.
5. Or equal.

B. General Requirements for Sensors: Automatic-wall-switch occupancy sensor with manual on-off switch, suitable for mounting in a single gang switchbox using hardwired connection.

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application**.**.
2. Occupancy Sensor Operation: Unless otherwise indicated, turn lights on when coverage area is occupied, and turn lights off when unoccupied; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.
3. Operating Ambient Conditions: Dry interior conditions, 32 to 120 deg F (0 to 49 deg C).
4. Switch Rating: Not less than 800-VA LED load at 120 V, 1200-VA LED load at 277 V, and 800-W incandescent.

C. Wall-Switch Sensor Tag WS1:

1. Standard Range: 180-degree field of view, field adjustable from 180 to 40 degrees; with a minimum coverage area of 900 sq. ft.
2. Sensing Technology: Dual technology - PIR and ultrasonic.
3. Switch Type: SP, field-selectable automatic "on," or manual "on," automatic "off."
4. Capable of controlling load in three-way application.
5. Voltage: Match the circuit voltage 120 V
6. Ambient-Light Override: Concealed, field-adjustable, light-level sensor from 10 to 150 fc (108 to 1600 lux). The switch prevents the lights from turning on when the light level is higher than the set point of the sensor.
7. Concealed, field-adjustable, "off" time-delay selector at up to 30 minutes.
8. Adaptive Technology: Self-adjusting circuitry detects and memorizes usage patterns of the space and helps eliminate false "off" switching.
9. Color: White.
10. Faceplate: Color matched to switch.

2.8 CONDUCTORS AND CABLES

A. Power Wiring to Supply Side of Remote-Control Power Sources: Not smaller than No. 12 AWG. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

B. Classes 2 and 3 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No. 18 AWG. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

C. Class 1 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No. 14 AWG. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine lighting control devices before installation. Reject lighting control devices that are wet, moisture damaged, or mold damaged.

B. Examine walls and ceilings for suitable conditions where lighting control devices will be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF SENSORS

A. Comply with NECA 1.

B. Coordinate layout and installation of ceiling-mounted devices with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, smoke detectors, fire-suppression systems, and partition assemblies.

C. Install and aim sensors in locations to achieve not less than 90 percent coverage of areas indicated. Do not exceed coverage limits specified in manufacturer's written instructions.

3.3 INSTALLATION OF WIRING

A. Comply with NECA 1.

B. Wiring Method: Comply with Section 260519 "Low-Voltage Electrical Power Conductors and Cables." Minimum conduit size is 1/2 inch (13 mm).

C. Wiring within Enclosures: Comply with NECA 1. Separate power-limited and nonpower-limited conductors in accordance with conductor manufacturer's written instructions.

D. Size conductors in accordance with lighting control device manufacturer's written instructions unless otherwise indicated.

E. Splices, Taps, and Terminations: Make connections only on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures.

3.4 IDENTIFICATION

A. Identify components and power and control wiring in accordance with Section 260553 "Identification for Electrical Systems.

B. Identify controlled circuits in lighting contactors.

C. Identify circuits or luminaires controlled by photoelectric and occupancy sensors at each sensor.

D. Label time switches and contactors with a unique designation.

3.5 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to evaluate lighting control devices and perform tests and inspections.

B. Manufacturer's Field Service: Engage a factory-authorized service representative company service advisor to test and inspect components, assemblies, and equipment installations, including connections.

C. Perform the following tests and inspections with the assistance of a factory authorized service representative:

1. Operational Test: After installing time switches and sensors, and after electrical circuitry has been energized, start units to confirm proper unit operation.
2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Lighting control devices will be considered defective if they do not pass tests and inspections.

E. Prepare test and inspection reports.

3.6 ADJUSTING

A. Occupancy Adjustments: When requested within 12 months from date of Substantial Completion, provide on-site assistance in adjusting lighting control devices to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.

1. For occupancy and motion sensors, verify operation at outer limits of detector range. Set time delay to suit Director’s Representative's operations.
2. For daylighting controls, adjust set points and deadband controls to suit Director’s Representative's operations.

3. Align high-bay occupancy sensors using manufacturer's laser aiming tool.

3.7 SOFTWARE SERVICE AGREEMENT

A. Technical Support: Beginning at Substantial Completion, service agreement shall include software support for two years.

B. Upgrade Service: At Substantial Completion, update software to latest version. Install and program software upgrades that become available within two years from date of Substantial Completion. Upgrading software shall include operating system and new or revised licenses for using software.

1. Upgrade Notice: At least 30 days to allow Director’s Representative to schedule and access the system and to upgrade computer equipment if necessary.

END OF SECTION 260923

SECTION 262413 - SWITCHBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Service and distribution switchboards rated 600 V and less.
2. Surge protection devices.
3. Disconnecting and overcurrent protective devices.
4. Instrumentation.
5. Control power.
6. Accessory components and features.
7. Identification.
8. Mimic bus.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each switchboard, overcurrent protective device, surge protection device, ground-fault protector, accessory, and component.

1. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.

E. Shop Drawings: For each switchboard and related equipment.

1. Include dimensioned plans, elevations, sections, and details, including required clearances and service space around equipment. Show tabulations of installed devices, equipment features, and ratings.
2. Detail enclosure types for types other than NEMA 250, Type 1.
3. Detail bus configuration, current, and voltage ratings.
4. Detail short-circuit current rating of switchboards and overcurrent protective devices.

5. Include descriptive documentation of optional barriers specified for electrical insulation and isolation.
6. Detail utility company's metering provisions with indication of approval by utility company.
7. Include evidence of NRTL listing for series rating of installed devices.
8. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
9. Include time-current coordination curves for each type and rating of overcurrent protective device included in switchboards. Submit on translucent log-log graft paper; include selectable ranges for each type of overcurrent protective device.
10. Include schematic and wiring diagrams for power, signal, and control wiring.

F. Delegated Design Submittal:

1. For arc-flash hazard analysis.
2. For arc-flash labels.

G. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

H. Qualification Data: For Installer.

I. Field Quality-Control Reports:

1. Test procedures used.
2. Test results that comply with requirements.
3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For switchboards and components to include in emergency, operation, and maintenance manuals.

1. Include the following:

a. Routine maintenance requirements for switchboards and all installed components.
b. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
c. Time-current coordination curves for each type and rating of overcurrent protective device included in switchboards. Submit on translucent log-log graft paper; include selectable ranges for each type of overcurrent protective device.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Control-Power Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than two of each size and type.

2. Indicating Lights: Equal to 10 percent of quantity installed for each size and type but no less than one of each size and type.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers qualified as defined in NEMA PB 2.1 and trained in electrical safety as required by NFPA 70E.

B. Testing Agency Qualifications: Accredited by NETA.

1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

C. Equipment Qualifications For Products Other Than Those Specified:

1. At the time of submission provide written notice to the Director of the intent to propose an "approved equivalent" for products other than those specified. Make the "approved equivalent" submission in a timely manner to allow the Director sufficient time to review the proposed product, perform inspections and witness test demonstrations.
2. If products other than those specified are proposed for use furnish the name, address, and telephone numbers of at least 5 comparable installations that can prove the proposed products have performed satisfactorily for 3 years. Certify in writing that the Director's Representative of the 5 comparable installations will allow inspection of their installation by the Director's Representative and the Company Field Advisor.

    a. Make arrangements with the Director's Representative of 2 installations (selected by the Director) for inspection of the installations by the Director's Representative. Also obtain the services of the Company Field Advisor for the proposed products to be present. Notify the Director a minimum of 3 weeks prior to the availability of the installations for the inspection, and provide at least one alternative date for each inspection.
    b. Only references from the actual Director or Director's Representative (Security Supervisor, Maintenance Supervisor, etc.) will be accepted. References from dealers, system installers or others, who are not the actual Director's Representative of the proposed products, are not acceptable.

        1) Verify the accuracy of all references submitted prior to submission and certify in writing that the accuracy of the information has been confirmed.

3. The product manufacturer shall have test facilities available that can demonstrate that the proposed products meet the contract requirements.

    a. Make arrangements with the test facility for the Director's Representative to witness test demonstrations. Also obtain the services of the Company Field Advisor for the proposed product to be present at the test facility. Notify the Director a minimum of 3 weeks prior to the availability of the test facility, and provide at least one alternative date for the testing.

4. Provide written certification from the manufacturer that the proposed products are compatible for use with all other equipment proposed for use for this system and meet all contract requirements.

D. Company Field Advisor: Secure the services of a Company Field Advisor for a minimum of 8 working hours for the following:

1. Render advice regarding the switchboard unit substation installation, and final adjustment and testing of the switchboard unit substation devices.
2. Witness final system test and then certify with an affidavit that the switchboard unit substation is installed in accordance with the contract documents and is operating properly.
3. Train facility personnel on the operation and maintenance of the switchboard unit substation devices (minimum of two 1 hour sessions).
4. Explain available service programs to facility supervisory personnel for their consideration.

E. Service Availability: A fully equipped service organization shall be available to service the completed Work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver switchboards in sections or lengths that can be moved past obstructions in delivery path.

B. Remove loose packing and flammable materials from inside switchboards and install temporary electric heating (250 W per section) to prevent condensation.

C. Handle and prepare switchboards for installation according to NECA 400.

1.8 FIELD CONDITIONS

A. Installation Pathway: Remove and replace access fencing, doors, lift-out panels, and structures to provide pathway for moving switchboards into place.

B. Environmental Limitations:

1. Do not deliver or install switchboards until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above switchboards is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
2. Rate equipment for continuous operation under the following conditions unless otherwise indicated:

    a. Ambient Temperature: Not exceeding 104 deg F.
    b. Altitude: Not exceeding 6600 feet.

1.9 COORDINATION

A. Coordinate layout and installation of switchboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

B. Coordinate sizes and locations of concrete bases with actual equipment provided. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified with concrete.

1.10 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace switchboard enclosures, buswork, overcurrent protective devices, accessories, and factory installed interconnection wiring that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Three years from date of Substantial Completion.

B. Manufacturer's Warranty: Manufacturer's agrees to repair or replace surge protection devices that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SWITCHBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Schneider Electric USA (Square D).
2. Eaton
3. Siemens Industry, Inc., Energy Management Division.
4. Approved equivalent.

B. Source Limitations: Obtain switchboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.

C. Product Selection for Restricted Space: Drawings indicate maximum dimensions for switchboards including clearances between switchboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

E. Comply with NEMA PB 2.

F. Comply with NFPA 70.

G. Comply with UL 891.

1. Main Devices: Fixed, individually mounted.
2. Branch Devices: Panel mounted.
3. Sections front and rear aligned.

H. Indoor Enclosures: Steel, NEMA 250, Type 1.

I. Enclosure Finish for Indoor Units: Factory-applied finish in manufacturer's standard color finish over a rust-inhibiting primer on treated metal surface.

J. Barriers: Between adjacent switchboard sections.

K. Insulation and isolation for main bus of main section and main and vertical buses of feeder sections.

L. Service Entrance Rating: Switchboards intended for use as service entrance equipment shall contain from one to six service disconnecting means with overcurrent protection, a neutral bus with disconnecting link, a grounding electrode conductor terminal, and a main bonding jumper.

M. Utility Metering Compartment: Barrier compartment and section complying with utility company's requirements; hinged sealable door; buses provisioned for mounting utility company's current transformers and potential transformers or potential taps as required by utility company. If separate vertical section is required for utility metering, match and align with basic switchboard. Provide service entrance label and necessary applicable service entrance features.

N. Customer Metering Compartment: A separate customer metering compartment and section with front hinged door, and section with front hinged door, for indicated metering, and current transformers for each meter. Current transformer secondary wiring shall be terminated on shorting-type terminal blocks. Include potential transformers having primary and secondary fuses with disconnecting mean and secondary wiring terminated on terminals blocks.

O. Hinged Front Panels: Allow access to circuit breaker, metering, accessory, and blank compartments.

P. Buses and Connections: Three phase, four wire unless otherwise indicated.

1. Provide phase bus arrangement A, B, C from front to back, top to bottom, and left to right when viewed from the front of the switchboard.
2. Phase- and Neutral-Bus Material: Hard-drawn copper of 98 percent conductivity, silver plated.
3. Copper feeder circuit-breaker line connections.
4. Ground Bus: Minimum size required by UL 891, -drawn copper of 98 percent conductivity, equipped with compression connectors for feeder and branch-circuit ground conductors.
5. Main-Phase Buses and Equipment-Ground Buses: Uniform capacity for entire length of switchboard's main and distribution sections. Provide for future extensions from both ends.
6. Disconnect Links:

    a. Isolate neutral bus from incoming neutral conductors.
    b. Bond neutral bus to equipment-ground bus for switchboards utilized as service equipment or separately derived systems.

7. Neutral Buses: 100 percent of the ampacity of phase buses unless otherwise indicated, equipped with compression connectors for outgoing circuit neutral cables. Brace bus extensions for busway feeder neutral bus.
8. Isolation Barrier Access Provisions: Permit checking of bus-bolt tightness.

Q. Future Devices: Equip compartments with mounting brackets, supports, bus connections, and appurtenances at full rating of circuit-breaker compartment.

2.2 SURGE PROTECTION DEVICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton.
2. Schneider Electric USA (Square D).
3. Siemens Industry, Inc., Energy Management Division.
4. Approved equivalent.

B. SPDs: Comply with UL 1449, Type 2.

C. SPDs: Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 1449, Type 2.

D. Features and Accessories:

1. Internal thermal protection that disconnects the SPD before damaging internal suppressor components.
2. Indicator light display for protection status.
3. Form-C contacts rated at 5 A and 250 V ac, one normally open and one normally closed, for remote monitoring of protection status.Contacts shall reverse on failure of any surge diversion module or on opening of any current-limiting device. Coordinate with building power monitoring and control system.
4. Surge counter.

E. Peak Surge Current Rating: The minimum single-pulse surge current withstand rating per phase shall not be less than 200KA. The peak surge current rating shall be the arithmetic sum of the ratings of the individual MOVs in a given mode.

F. Protection modes and UL 1449 VPR for grounded wye circuits with 208Y/120 V, three-phase, four-wire circuits shall not exceed the following:

1. Line to Neutral: 700 V for 208Y/120 V
2. Line to Ground: 1200 V for 208Y/120 V.
3. Line to Line: 1000 V for 208Y/120 V

G. SCCR: Equal or exceed 200 kA

H. Nominal Rating: 20 KA.

2.3 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

A. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
2. Adjustable Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
3. Electronic trip circuit breakers with rms sensing; field-replaceable rating plug or field-replicable electronic trip; and the following field-adjustable settings:

    a. Instantaneous trip.
    b. Long- and short-time pickup levels.
    c. Long and short time adjustments.
    d. Ground-fault pickup level, time delay, and I squared t response.

4. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller; let-through ratings less than NEMA FU 1, RK-5.
5. Integrally Fused Circuit Breakers: Thermal-magnetic trip element with integral limiter-style fuse listed for use with circuit breaker; trip activation on fuse opening or on opening of fuse compartment door.
6. GFCI Circuit Breakers: Single- and double-pole configurations with Class A ground-fault protection (6-mA trip).
7. Ground-Fault Equipment Protection (GFEP) Circuit Breakers: Class B ground-fault protection (30-mA trip).
8. MCCB Features and Accessories:

    a. Standard frame sizes, trip ratings, and number of poles.
    b. Lugs: Compression style, suitable for number, size, trip ratings, and conductor material.
    c. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge (HID) lighting circuits.
    d. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.
    e. Zone-Selective Interlocking: Integral with electronic trip unit; for interlocking ground-fault protection function.
    f. Shunt Trip: 120-V trip coil energized from separate circuit, set to trip at 75 percent of rated voltage. Provide shunt trip for indicated breakers on drawings.
    g. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage without intentional time delay.

B. Insulated-Case Circuit Breaker (ICCB): 100 percent rated, sealed, insulated-case power circuit breaker with interrupting capacity rating to meet available fault current.

1. Fixed [circuit-breaker mounting.
2. Two-step, stored-energy closing.
3. Full-function, microprocessor-based trip units with interchangeable rating plug, trip indicators, and the following field-adjustable settings:

    a. Instantaneous trip.
    b. Time adjustments for long- and short-time pickup.
    c.

4. Remote trip indication and control.
5. Control Voltage: 120 V ac.

2.4 INSTRUMENTATION

A. Instrument Transformers: NEMA EI 21.1, and the following:

1. Current Transformers: NEMA EI 21.1; 5 A, 60 Hz, secondary; wound type; single secondary winding and secondary shorting device. Burden and accuracy shall be consistent with connected metering and relay devices.
2. Control-Power Transformers: Dry type, mounted in separate compartments for units larger than 3 kVA.
3. Current Transformers for Neutral and Ground-Fault Current Sensing: Connect secondary wiring to ground overcurrent relays, via shorting terminals, to provide selective tripping of main and tie circuit breaker. Coordinate with feeder circuit-breaker, ground-fault protection.

B. Multifunction Digital-Metering Monitor: Microprocessor-based unit suitable for three- or four-wire systems and with the following features:

1. Switch-selectable digital display of the following values with maximum accuracy tolerances as indicated:

a. Phase Currents, Each Phase: Plus or minus 0.5 percent.
b. Phase-to-Phase Voltages, Three Phase: Plus or minus 0.5 percent.
c. Phase-to-Neutral Voltages, Three Phase: Plus or minus 0.5 percent.
d. Megawatts: Plus or minus 1 percent.
e. Megavars: Plus or minus 1 percent.
f. Power Factor: Plus or minus 1 percent.
g. Frequency: Plus or minus 0.1 percent.
h. Accumulated Energy, Megawatt Hours: Plus or minus 1 percent; accumulated values unaffected by power outages up to 72 hours.
i. Megawatt Demand: Plus or minus 1 percent; demand interval programmable from five to 60 minutes.
j. Contact devices to operate remote impulse-totalizing demand meter.

2. Mounting: Display and control unit flush or semiflush mounted in instrument compartment door.

C. Voltmeters: Cover an expanded-scale range of nominal voltage plus 10 percent.

D. Instrument Switches: Rotary type with off position.

1. Voltmeter Switches: Permit reading of all phase-to-phase voltages and, where a neutral is indicated, phase-to-neutral voltages.
2. Ammeter Switches: Permit reading of current in each phase and maintain current-transformer secondaries in a closed-circuit condition at all times.

E. Ammeters: 2-1/2-inch minimum size with 90- or 120-degree scale. Meter and transfer device with off position, located on overcurrent device door for indicated feeder circuits only.

F. Watt-Hour Meters and Wattmeters:

1. Comply with ANSI C12.1.
2. Three-phase induction type with two stators, each with current and potential coil, rated 5 A, 120 V, 60 Hz.
3. Suitable for connection to three- and four-wire circuits.
4. Potential indicating lamps.
5. Adjustments for light and full load, phase balance, and power factor.
6. Four-dial clock register.
7. Integral demand indicator.
8. Contact devices to operate remote impulse-totalizing demand meter.
9. Ratchets to prevent reverse rotation.
10. Removable meter with drawout test plug.
11. Semiflush mounted case with matching cover.
12. Appropriate multiplier tag.

G. Impulse-Totalizing Demand Meter:

1. Comply with ANSI C12.1.
2. Suitable for use with switchboard watt-hour meter, including two-circuit totalizing relay.
3. Cyclometer.
4. Four-dial, totalizing kilowatt-hour register.
5. Positive chart drive mechanism.
6. Capillary pen holding a minimum of one month's ink supply.
7. Roll chart with minimum 31-day capacity; appropriate multiplier tag.
8. Capable of indicating and recording 30-minute integrated demand of totalized system.

2.5 CONTROL POWER

A. Control Circuits: 120-V ac, supplied through secondary disconnecting devices from control-power transformer.

B. Control Circuits: 120-V ac, supplied from remote branch circuit.

C. Control Circuits: 120 V dc.

2.6 ACCESSORY COMPONENTS AND FEATURES

A. Portable Test Set: For testing functions of solid-state trip devices without removing from switchboard. Include relay and meter test plugs suitable for testing switchboard meters and switchboard class relays.

B. Mounting Accessories: For anchors, mounting channels, bolts, washers, and other mounting accessories.

2.7 IDENTIFICATION

A. Presentation Media: Painted graphics in color contrasting with background color to represent bus and components, complete with lettered designations.

B. Service Equipment Label: NRTL labeled for use as service equipment for switchboards with one or more service disconnecting and overcurrent protective devices.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Receive, inspect, handle, and store switchboards according to NECA 400**.**

1. Lift or move panelboards with spreader bars and manufacturer-supplied lifting straps following manufacturer's instructions.
2. Use rollers, slings, or other manufacturer-approved methods if lifting straps are not furnished.
3. Protect from moisture, dust, dirt, and debris during storage and installation.
4. Install temporary heating during storage per manufacturer's instructions.

B. Examine switchboards before installation. Reject switchboards that are moisture damaged or physically damaged.

C. Examine elements and surfaces to receive switchboards for compliance with installation tolerances and other conditions affecting performance of the Work or that affect the performance of the equipment.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install switchboards and accessories according to NECA 400.

B. Equipment Mounting: Install switchboards on concrete base, 4-inch nominal thickness.

1. Install conduits entering underneath the switchboard, entering under the vertical section where the conductors will terminate. Install with couplings flush with the concrete base. Extend 2 inches above concrete base after switchboard is anchored in place.
2. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base.
3. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete floor.
4. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
5. Install anchor bolts to elevations required for proper attachment to switchboards.
6. Anchor switchboard to building structure at the top of the switchboard if required or recommended by the manufacturer.

C. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, straps and brackets, and temporary blocking of moving parts from switchboard units and components.

D. Install filler plates in unused spaces of panel-mounted sections.

E. Install overcurrent protective devices, surge protection devices, and instrumentation.

1. Set field-adjustable switches and circuit-breaker trip ranges.

F. Comply with NECA 1.

3.3 CONNECTIONS

A. Bond conduits entering underneath the switchboard to the equipment ground bus with a bonding conductor sized per NFPA 70.

B. Support and secure conductors within the switchboard according to NFPA 70.

C. Extend insulated equipment grounding cable to busway ground connection and support cable at intervals in vertical run.

3.4 FIELD QUALITY CONTROL

A. Testing Agency: Director’s Representative will engage a qualified testing agency to perform tests and inspections.

B. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

C. Manufacturer's Field Service: Engage a Company Service Advisor to test and inspect components, assemblies, and equipment installations, including connections.

D. Perform tests and inspections with the assistance of a Company Service Advisor.

E. Tests and Inspections:

1. Acceptance Testing:

a. Test insulation resistance for each switchboard bus, component, connecting supply, feeder, and control circuit. Open control and metering circuits within the switchboard, and remove neutral connection to surge protection and other electronic devices prior to insulation test. Reconnect after test.
b. Test continuity of each circuit.

2. Test ground-fault protection of equipment for service equipment per NFPA 70.
3. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
4. Correct malfunctioning units on-site where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
5. Perform the following infrared scan tests and inspections, and prepare reports:

a. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each switchboard. Remove front and rear panels so joints and connections are accessible to portable scanner.
b. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each switchboard 11 months after date of Substantial Completion.
c. Instruments and Equipment:

1) Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

6. Test and adjust controls, remote monitoring, and safeties. Replace damaged and malfunctioning controls and equipment.

F. Switchboard will be considered defective if it does not pass tests and inspections.

G. Prepare test and inspection reports, including a certified report that identifies switchboards included and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.5 ADJUSTING

A. Adjust moving parts and operable components to function smoothly, and lubricate as recommended by manufacturer.

3.6 PROTECTION

A. Temporary Heating: Apply temporary heat, to maintain temperature according to manufacturer's written instructions, until switchboard is ready to be energized and placed into service.

3.7 DEMONSTRATION

A. Train Director’s Representative's maintenance personnel to adjust, operate, and maintain switchboards, overcurrent protective devices, instrumentation, and accessories, and to use and reprogram microprocessor-based trip, monitoring, and communication units.

END OF SECTION 262413

SECTION 262416 – PANELBOARDS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Panelboards.
2. Disconnecting and overcurrent protective devices.

B. Related Requirements:

1. Section 260529 "Hangers and Supports for Electrical Systems" specifies concrete bases and supports for panelboards installed by this Section.
2. Section 260553 "Identification for Electrical Systems" specifies electrical equipment labels and warning signs installed by this Section.
3. Section 260573 "Power System Studies" specifies short-circuit current studies, overcurrent protective device coordination studies, and arc-flash hazard analysis studies.
4. Section 262813 "Fuses" specifies fuses and spare-fuse cabinets installed by this Section.
5. Section 264313 "Surge Protective Devices for Low-Voltage Electrical Power Circuits" specifies Type 2 surge protective devices installed by this Section.

1.2 DEFINITIONS

A. MCCB: Molded-case circuit breaker.

B. VPR: Voltage protection rating.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. In addition to information identified in Section 013300 "Submittal Procedures," submit the following:

1. Product Listing: Include copy of unexpired approval letter, on letterhead of qualified electrical testing agency, certifying product's compliance with specified listing criteria.
2. Include manufacturer's sample extended warranty language.

B. Shop Drawings: For each panelboard and related equipment:

1. Include dimensioned plans, elevations, sections, and details.
2. Show tabulations of installed devices with nameplates, conductor termination sizes, equipment features, and ratings.
3. Detail enclosure types including mounting and anchorage, environmental protection, knockouts, corner treatments, covers and doors, gaskets, hinges, and locks.
4. Detail bus configuration, current, and voltage ratings.

5. Short-circuit current rating of panelboards and overcurrent protective devices.
6. Include evidence of listing, by qualified electrical testing laboratory recognized by authorities having jurisdiction, for SPD as installed in panelboard.
7. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
8. Include wiring diagrams for power, signal, and control wiring.
9. Key interlock scheme drawing and sequence of operations.
10. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards. Submit on translucent log-log graft paper; include selectable ranges for each type of overcurrent protective device. Include Internet link for electronic access to downloadable PDF of coordination curves.

C. Field quality-control reports.

1.4 INFORMATIONAL SUBMITTALS

A. Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.

B. Submittals Package: Submit the shop drawings, and the product data specified below at the same time as a package.

C. Shop Drawings; include the following for each panelboard:

1. Detail for installation of panelboard when using in existing cabinet including verification of size and spacing requirements of panelboard in existing cabinet.
2. Voltage and current rating.
3. Panelboard short circuit rating. Indicate if rating is Fully Rated Equipment Rating, or where acceptable, UL listed Integrated Equipment Short Circuit Rating.
4. Circuit breaker enumeration (frame, ATE, poles, I.C.).

    a. Indicate if circuit breakers are suitable for the panelboards' Fully Rated Equipment Rating, or where acceptable, are series connected devices which have been test verified and listed with UL (include documentation proving the compatibility of the proposed circuit breaker combinations). Circuit breakers do not have to be listed as series connected devices when all of the circuit breaker interrupting ratings are equal to, or greater than, the short circuit rating of the panelboard.

5. Accessories.

D. Manufacturer's published instructions.

E. Field Reports:

1. Manufacturer's field reports for field quality-control support.
2. Field reports for voltage monitoring and adjusting.
3. Field reports for infrared scanning.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Deliver 2 copies, covering the installed products, to the Director's Representative.

B. Warranty documentation.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Spare parts.

B. Special tools.

1.7 QUALIFICATIONS

A. Low-Voltage Electrical Testing and Inspecting Agency: Entities possessing active credentials from a qualified electrical testing laboratory recognized by authorities having jurisdiction.

1. On-site electrical testing supervisors must have documented certification and experience with testing electrical equipment in accordance with NETA testing standards.

B. Quality Control Submittals:

1. List of Completed Installations: If brand names other than those specified are proposed for use, furnish the name, address, and telephone number of at least 5 comparable installations that can prove the proposed products have operated satisfactorily for one year.
2. Company Field Advisor Data: Include:

a. Name, business address and telephone number of Company Field Advisor secured for the required services.
b. Certified statement from the Company listing the qualifications of the Company Field Advisor.
c. Services and each product for which authorization is given by the Company listed specifically for this project.

C. Contract Closeout Submittals:

1. System acceptance test report.
2. Certificate: Affidavit, signed by the Company Field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly.
3. Operation and Maintenance Data: Deliver 2 copies, covering the installed products, to the Director's Representative.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Remove loose packing and flammable materials from inside panelboards; install temporary electric heating (250 W per panelboard) to prevent condensation.

B. Handle and prepare panelboards for installation in accordance with NECA 407.

1.9 WARRANTY

1. Extended-Warranty Period: Two years from date of Substantial Completion; full coverage for labor, materials, and equipment.

B. Special Manufacturer Extended Warranty: Manufacturer warrants that panelboards perform in accordance with specified requirements and agrees to provide repair or replacement of components or products that fail to perform as specified within extended-warranty period.

1. Initial Extended-Warranty Period: Four years from date of Substantial Completion; full coverage for labor, materials, and equipment.
2. Follow-On Extended-Warranty Period: Five years from date of Substantial Completion; full coverage for materials that failed because of transient voltage surges only, free on board origin freight prepaid.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.

C. Comply with NEMA PB 1.

D. Enclosures: Flush or Surface-mounted, dead-front cabinets.

1. Rated for environmental conditions at installed location.

    a. Indoor Dry and Clean Locations: UL 50E, Type 1.
    b. Outdoor Locations: UL 50E, Type 3R.
    c. Kitchen and Wash-Down Areas: UL 50E, Type 4X, stainless steel.
    d. Other Wet or Damp Indoor Locations: UL 50E, Type 4.
    e. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: UL 50E, Type 5.

2. Height: 7 ft maximum.
3. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover. Trims must cover live parts and may have no exposed hardware.
4. Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.

5. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
6. Finishes:

    a. Panels and Trim: Steel factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
    b. Back Boxes: Same finish as panels and trim.
    c. Fungus Proofing: Permanent fungicidal treatment for overcurrent protective devices and other components.

E. Phase, Neutral, and Ground Buses:

1. Material: Hard-drawn cooper, 98 percent conductivity.

    a. Plating must run entire length of bus.
    b. Bus must be fully rated for entire length.

2. Interiors must be factory assembled into unit. Replacing switching and protective devices may not disturb adjacent units or require removing main bus connectors.
3. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.

F. Conductor Connectors: Suitable for use with conductor material and sizes.

1. Material: Hard-drawn cooper, 98 percent conductivity.
2. Terminations must allow use of 75 deg C rated conductors without derating.
3. Size: Lugs suitable for indicated conductor sizes, with additional gutter space, if required, for larger conductors.
4. Main and Neutral Lugs**:** Compression type, with lug on neutral bar for each pole in panelboard.
5. Ground Lugs and Bus-Configured Terminators: Compression type, with lug on bar for each pole in panelboard.

G. Future Devices: Panelboards or load centers must have mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.

1. Percentage of Future Space Capacity: 10 percent.

H. Panelboard Short-Circuit Current Rating:

1. Fully rated to interrupt symmetrical short-circuit current available at terminals. Assembly listed, by qualified electrical testing laboratory recognized by authorities having jurisdiction, for 100 percent interrupting capacity.

    a. Panelboards and overcurrent protective devices rated 240 V or less must have short-circuit ratings as shown on Drawings, but not less than 10 000 A(rms) symmetrical.
    b. Panelboards and overcurrent protective devices rated above 240 V and less than 600 V must have short-circuit ratings as shown on Drawings, but not less than 14 000 A(rms) symmetrical.

2.2 PANELBOARDS

A. UL QEUY: - Lighting and Appliance Branch-Circuit Panelboard <LPP>:

1. As produced by Cutler-Hammer/Eaton Corp. with LT Trim (Eaton EZ Trim shall not be considered), General Electric Co., Siemens or Square D Co.
2. Source Limitations: Obtain products from single manufacturer.
3. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

    a. Lighting and Appliance Branch-Circuit Type Panelboards: UL CCN QEUY; including UL 67 and NEMA PB 1.

4. Standard Features:

    a. Mains: Circuit breaker:

        1) Location: Convertible between top and bottom.
        2) Main Breaker: Main lug interiors up to 400 A must be field convertible to main breaker.

    b. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

B. UL QEUY: Lighting and Appliance Branch-Circuit Panelboard <ULP>:

1. As produced by Cutler-Hammer/Eaton Corp. with LT Trim (Eaton EZ Trim shall not be considered), General Electric Co., Siemens or Square D Co.
2. Source Limitations: Obtain products from single manufacturer.
3. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

    a. Lighting and Appliance Branch-Circuit Type Panelboards: UL CCN QEUY; including UL 67 and NEMA PB 1.

4. Standard Features:

    a. Mains: Circuit breaker:

        1) Location: Convertible between top and bottom.
        2) Main Breaker: Main lug interiors up to 400 A must be field convertible to main breaker.

    b. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

C. UL QEUY: - Lighting and Appliance Branch-Circuit Panelboard <UPP>:

1. As produced by Cutler-Hammer/Eaton Corp. with LT Trim (Eaton EZ Trim shall not be considered), General Electric Co., Siemens or Square D Co.
2. Source Limitations: Obtain products from single manufacturer.
3. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

    a. Lighting and Appliance Branch-Circuit Type Panelboards: UL CCN QEUY; including UL 67 and NEMA PB 1.

4. Standard Features:

    a. Mains: Circuit breaker:

        1) Location: Convertible between top and bottom.
        2) Main Breaker: Main lug interiors up to 400 A must be field convertible to main breaker.

    b. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

D. UL QEUY: - Lighting and Appliance Branch-Circuit Panelboard <LLP>:

1. As produced by Cutler-Hammer/Eaton Corp. with LT Trim (Eaton EZ Trim shall not be considered), General Electric Co., Siemens or Square D Co.
2. Source Limitations: Obtain products from single manufacturer.
3. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

    a. Lighting and Appliance Branch-Circuit Type Panelboards: UL CCN QEUY; including UL 67 and NEMA PB 1.

4. Standard Features:

    a. Mains: Lugs Only:

        1) Location: Convertible between top and bottom.
        2) Lug only: Main lug interiors up to 400 A must be field convertible to main breaker.

    b. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

5. Other Available Features Required by Project:

    a. Surge Suppression: Factory installed as integral part of indicated panelboards, complying with UL 1449 SPD Type 2.

E. UL QEUY: - Lighting and Appliance Branch-Circuit Panelboard <LMP>:

1. As produced by Cutler-Hammer/Eaton Corp. with LT Trim (Eaton EZ Trim shall not be considered), General Electric Co., Siemens or Square D Co.
2. Source Limitations: Obtain products from single manufacturer.
3. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

    a. Lighting and Appliance Branch-Circuit Type Panelboards: UL CCN QEUY; including UL 67 and NEMA PB 1.

4. Standard Features:

    a. Mains: Lugs Only:

        1) Location: Convertible between top and bottom.
        2) Lug only: Main lug interiors up to 400 A must be field convertible to main breaker.

    b. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

2.3 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

A. As produced by Cutler-Hammer/Eaton Corp., General Electric Co., Siemens or Square D Co.

B. MCCB: Comply with UL 489, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers:

    a. Inverse time-current element for low-level overloads.
    b. Instantaneous magnetic trip element for short circuits.
    c. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

2. Adjustable Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
3. Electronic Trip Circuit Breakers:

    a. RMS sensing.
    b. Field-replaceable rating plug or electronic trip.
    c. Digital display of settings, trip targets, and indicated metering displays.
    d. Multi-button keypad to access programmable functions and monitored data.
    e. Ten-event, trip-history log. Each trip event must be recorded with type, phase, and magnitude of fault that caused trip.
    f. Integral test jack for connection to portable test set or laptop computer.
    g. Field-Adjustable Settings:

        1) Instantaneous trip.
        2) Long- and short-time pickup levels.
        3) Long- and short-time adjustments.
        4) Ground-fault pickup level, time delay, and I squared T response.

4. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller; let-through ratings less than NEMA FU 1, RK-5.
5. GFCI Circuit Breakers: Single- and double-pole configurations with Class A ground-fault protection (6 mA trip).
6. GFPE Circuit Breakers: Class B ground-fault protection (30 mA trip).
7. Subfeed Circuit Breakers: Vertically mounted.
8. MCCB Features and Accessories:

    a. Standard frame sizes, trip ratings, and number of poles.
    b. Breaker handle indicates tripped status.
    c. UL listed for reverse connection without restrictive line or load ratings.
    d. Lugs: Compression, suitable for number, size, trip ratings, and conductor materials.
    e. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and HID lighting circuits.
    f. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.
    g. Communication Capability: Integral communication module with functions and features compatible with power monitoring and control system.
    h. Handle Padlocking Device: Fixed attachment, for locking circuit-breaker handle in on or off position.
    i. Handle Clamp: Loose attachment, for holding circuit-breaker handle in on position.
    j. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage without intentional time delay.
    k. Rating Plugs: Three-pole breakers with ampere ratings greater than 150 A must have interchangeable rating plugs or electronic adjustable trip units.

2.4 MAINTENANCE MATERIAL ITEMS

A. Spare Parts: Furnish to Owner spare parts, for repairing panelboards and related equipment, that are packaged with protective covering for storage on-site and identified with labels describing contents. Include the following:

1. Yale No. 511S locks with brass cylinder rosette, blind fastened from inside of door. 2 No. 47 keys with each lock (Exception: Not more than 7 keys, total) Keys: Two spares for each type of panelboard cabinet lock.
2. Circuit Breakers Including GFCI and GFPE Types: Two spares for each panelboard.
3. Fuses for Fused Switches: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

B. Special Tools: Furnish to Owner proprietary equipment, keys, and software required to operate, maintain, repair, adjust, or implement future changes to panelboards and related equipment, that are packaged with protective covering for storage on-site and identified with labels describing contents. Include the following:

1. Accessory Set: Include tools and miscellaneous items required for overcurrent protective device test, inspection, maintenance, and operation.
2. Portable Test Set: For testing functions of solid-state trip devices without removing from panelboard. Include relay and meter test plugs suitable for testing panelboard meters and switchboard class relays.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify actual conditions with field measurements prior to ordering panelboards to verify that equipment fits in allocated space in, and comply with, minimum required clearances specified in NFPA 70.

B. Receive, inspect, handle, and store panelboards in accordance with NECA 407.

C. Examine panelboards before installation. Reject panelboards that are damaged, rusted, or have been subjected to water saturation.

D. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with manufacturer's published instructions.

B. Reference Standards:

1. Panelboards: Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NECA 407.
2. Consult Director’s Representative for resolution of conflicting requirements.

C. Special Techniques:

1. Equipment Mounting:

    a. Install floor-mounted panelboards on cast-in-place concrete equipment base(s).
    b. Attach panelboard to vertical finished or structural surface behind panelboard.
    c. Mount surface-mounted panelboards to steel slotted supports 5/8 inch, 1- 1/4 inch in depth. Orient steel slotted supports vertically.

2. Mount top of trim 7.5 ft above finished floor unless otherwise indicated.
3. Mount panelboard cabinet plumb and rigid without distortion of box.
4. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.
5. Install overcurrent protective devices and controllers not already factory installed.

    a. Set field-adjustable, circuit-breaker trip ranges.
    b. Tighten bolted connections and circuit breaker connections using calibrated torque wrench or torque screwdriver in accordance with manufacturer's published instructions.

6. Make grounding connections and bond neutral for services and separately derived systems to ground. Make connections to grounding electrodes, separate grounds for isolated ground bars, and connections to separate ground bars.
7. Install filler plates in unused spaces.
8. Stub four 1 inch empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in future. Stub four 1 inch empty conduits into raised floor space or below slab not on grade.
9. Arrange conductors in gutters into groups and bundle and wrap with wire ties after completing load balancing.
10. Mount spare fuse cabinet in accessible location.

D. Remove the neutral to ground main/system bonding jumper unless the panelboard is used for a service entrance or if the panel if fed by a separately derived system. Turn the bonding jumper over to the Director's Representative.

E. Interfaces with Other Work:

1. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

3.3 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components.

B. Install warning signs.

C. Panelboard Nameplates: Label each panelboard with nameplate that explains the means of identifying each ungrounded system conductor by phase and system. Examples of nameplate statements:

1. Identification of 120/240 Volt Circuit Conductors:

a. 2 wire circuit - white*, black.
b. 3 wire circuit - white*, black, red.
c. 4 wire circuit - white*, black, red, blue.

*White is used only as neutral. Where neutral is not required, black, red, or black, red, blue is used for phase to phase circuits.

D. Device Nameplates: Label each branch circuit device in power panelboards with nameplate.

E. Panelboard Label: Manufacturer's name and trademark, voltage, amperage, number of phases, and number of poles must be located on interior of panelboard door.

F. Breaker Labels: Faceplate must list current rating, UL and IEC certification standards, and AIC rating.

G. Circuit Directory:

1. Provide directory card inside panelboard door, mounted in transparent card holder.

    a. Circuit directory must identify specific purpose with detail sufficient to distinguish it from other circuits.

2. Provide computer-generated circuit directory mounted inside panelboard door with transparent plastic protective cover.

    a. Circuit directory must identify specific purpose with detail sufficient to distinguish it from other circuits.

3. Create directory to indicate installed circuit loads after balancing panelboard loads; incorporate Owner's final room designations. Obtain approval before installing. Handwritten directories are not acceptable. Install directory inside panelboard door.

3.4 FIELD QUALITY CONTROL

A. Administrant for Low-Voltage Electrical Tests and Inspections:

1. Director’s Representative will engage qualified low-voltage electrical testing and inspecting agency to administer and perform tests and inspections.
2. Engage qualified low-voltage electrical testing and inspecting agency to administer and perform tests and inspections.
3. Engage factory-authorized service representative to administer and perform tests and inspections on components, assemblies, and equipment installations, including connections.
4. Administer and perform tests and inspections with assistance of factory-authorized service representative.

B. Acceptance Testing Preparation:

1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
2. Test continuity of each circuit.

C. Field tests and inspections must be witnessed by the Director’s Representative.

D. Tests and Inspections:

1. Perform each visual and mechanical inspection and electrical test for low-voltage air circuit breakers and low-voltage surge arrestors stated in NETA ATS, Paragraph 7.6 Circuit Breakers and Paragraph 7.19.1 Surge Arrestors, Low-Voltage. Do not perform optional tests. Certify compliance with test parameters.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
3. Perform the following infrared scan tests and inspections and prepare reports:

a. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform infrared scan of each panelboard. Remove front panels so joints and connections are accessible to portable scanner.
b. Follow-up Infrared Scanning: Perform additional follow-up infrared scan of each panelboard 11 months after date of Substantial Completion.
c. Instruments and Equipment:

1) Use infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

E. Nonconforming Work:

1. Panelboards will be considered defective if they do not pass tests and inspections.
2. Remove and replace defective units and retest.

F. Field Quality-Control Reports: Collect, assemble, and submit test and inspection reports.

1. Include certified report that identifies panelboards included and that describes scanning results, with comparisons of two scans. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

G. Manufacturer Services: Engage factory-authorized service representative to supervise field tests and inspections.

3.5 ADJUSTING

A. Adjust moving parts and operable components to function smoothly, and lubricate as recommended by manufacturer.

B. Set field-adjustable circuit-breaker trip ranges.

C. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes. Prior to making circuit changes to achieve load balancing, inform Director's Representative of effect on phase color coding.

1. Measure loads during period of normal facility operations.
2. Perform circuit changes to achieve load balancing outside normal facility operation schedule or at times directed by Director's Representative. Avoid disrupting services such as fax machines and on-line data processing, computing, transmitting, and receiving equipment.
3. After changing circuits to achieve load balancing, recheck loads during normal facility operations. Record load readings before and after changing circuits to achieve load balancing.
4. Tolerance: Maximum difference between phase loads, within panelboard, may not exceed 20 percent.

3.6 PROTECTION

A. Temporary Heating: Prior to energizing panelboards, apply temporary heat to maintain temperature in accordance with manufacturer's published instructions.

END OF SECTION 262416

SECTION 262726 - WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Standard-grade receptacles, 125 V, 20 A.
2. GFCI receptacles, 125 V, 20 A.
3. Twist-locking receptacles.
4. Pendant cord-connector devices.
5. Cord and plug sets.
6. Toggle switches, 120/277 V, 20 A.
7. Occupancy sensors.
8. Wall plates.
9. Poke-through assemblies.
10. Service poles.

1.3 DEFINITIONS

A. AFCI: Arc-fault circuit interrupter.

B. GFCI: Ground-fault circuit interrupter.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

E. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.

F. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

G. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing-label warnings and instruction manuals that include labeling conditions.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Poke-Through, Fire-Rated Closure Plugs: One for every five floor service outlets installed, but no fewer than two.

PART 2 - PRODUCTS

2.1 GENERAL WIRING-DEVICE REQUIREMENTS

A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

B. Comply with NFPA 70.

C. RoHS compliant.

D. Comply with NEMA WD 1.

E. Devices that are manufactured for use with modular plug-in connectors may be substituted under the following conditions:

1. Connectors shall comply with UL 2459 and shall be made with stranding building wire.
2. Devices shall comply with requirements in this Section.

F. Device Color:

1. Wiring Devices Connected to Normal Power System: White/ As select by Architect unless otherwise indicated or required by NFPA 70 or device listing.

G. Wall Plate Color: For plastic covers, match device color.

H. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

2.2 STANDARD-GRADE RECEPTACLES, 125 V, 20 A

A. Duplex Receptacles, 125 V, 20 A.

1. Manufacturers: Subject to compliance with requirements; provide products by the following:

    a. Leviton Manufacturing Co., Inc.
    b. Pass & Seymour; Legrand North America, LLC.
    c. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial.
    d. Or equal.

2. Description: Two pole, three wire, and self-grounding.
3. Configuration: NEMA WD 6, Configuration 5-20R.
4. Standards: Comply with UL 498 and FS W-C-596.

B. Tamper-Resistant Duplex Receptacles, 125 V, 20 A

1. Manufacturers: Subject to compliance with requirements:

    a. Leviton Manufacturing Co., Inc.
    b. Pass & Seymour; Legrand North America, LLC.
    c. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial.
    d. Or equal.

2. Description: Two pole, three wire, and self-grounding. Integral shutters that operate only when a plug is inserted in the receptacle.
3. Configuration: NEMA WD 6, Configuration 5-20R.
4. Standards: Comply with UL 498 and FS W-C-596.
5. Marking: Listed and labeled as complying with NFPA 70, "Tamper-Resistant Receptacles" Article.

C. Weather-Resistant Duplex Receptacle, 125 V, 20 A.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

    a. Leviton Manufacturing Co., Inc.
    b. Pass & Seymour; Legrand North America, LLC.
    c. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial.
    d. Or equal.

2. Description: Two poles, three wire, and self-grounding. Integral shutters that operate only when a plug is inserted in the receptacle. Square face.
3. Configuration: NEMA WD 6, Configuration 5-20R.
4. Standards: Comply with UL 498.
5. Marking: Listed and labeled as complying with NFPA 70, "Receptacles in Damp or Wet Locations" Article.

D. Tamper- and Weather-Resistant Duplex Receptacles, 125 V, 20 A.>:

1. Manufacturers: Subject to compliance with requirements; provide products by the following:

    a. Leviton Manufacturing Co., Inc.
    b. Pass & Seymour; Legrand North America, LLC.
    c. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial.
    d. Or equal.

2. Description: Two pole, three wire, and self-grounding. Integral shutters that operate only when a plug is inserted in the receptacle. Square face.
3. Configuration: NEMA WD 6, Configuration 5-20R.
4. Standards: Comply with UL 498.
5. Marking: Listed and labeled as complying with NFPA 70, "Tamper-Resistant Receptacles" and "Receptacles in Damp or Wet Locations" articles.

2.3 GFCI RECEPTACLES, 125 V, 20 A

A. Duplex GFCI Receptacles, 125 V, 20 A .

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

    a. Leviton Manufacturing Co., Inc.
    b. Pass & Seymour; Legrand North America, LLC.
    c. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial.
    d. Or equal.

2. Description: Integral GFCI with "Test" and "Reset" buttons and LED indicator light. Two pole, three wire, and self-grounding.
3. Configuration: NEMA WD 6, Configuration 5-20R.
4. Type: Feed Non-feed Feed through.
5. Standards: Comply with UL 498, UL 943 Class A, and FS W-C-596.
6. Provide while in use cover for wet locations to comply with NEC 406.9.

2.4 TOGGLE SWITCHES, 120/277 V, 20 A

A. Single-Pole Switches, 120/277 V, 20 A

1. Manufacturers: Subject to compliance with requirements; provide products by the following:

    a. Leviton Manufacturing Co., Inc.
    b. Pass & Seymour; Legrand North America, LLC.
    c. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial.
    d. Or equal.

2. Standards: Comply with UL 20 and FS W-S-896.

2.5 OCCUPANCY SENSORS

A. Wall Switch Sensor Light Switch, Dual Technology

1. Manufacturers: Subject to compliance with requirements; provide products by the following:

    a. Leviton Manufacturing Co., Inc.
    b. Pass & Seymour; Legrand North America, LLC.
    c. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial.
    d. Or equal.

2. Description: Switchbox-mounted, combination lighting-control sensor and conventional switch lighting-control unit using dual (ultrasonic and passive infrared) technology.
3. Standards: Comply with UL 20.
4. Rated 960 W at 120 V ac for tungsten lighting, 10 A at 120 V ac or 10 A at 277 V ac for fluorescent or LED lighting, and 1/4 hp at 120 V ac.
5. Adjustable time delay of 15 minutes.
6. Able to be locked to ManualOn mode.
7. Automatic Light-Level Sensor: Adjustable from 2 to 200 fc.
8. Hardwired.

2.6 WALL PLATES

A. Single Source: Obtain wall plates from same manufacturer of wiring devices.

B. Single and combination types shall match corresponding wiring devices.

1. Plate-Securing Screws: Metal with head color to match plate finish.
2. Material for Finished Spaces:[Smooth, high-impact thermoplastic
3. Material for Unfinished Spaces: Galvanized steel.
4. Material for Damp Locations: Cast aluminum spring-loaded lift cover, and listed and labeled for use in wet and damp locations.
5. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with Type 3R, weather-resistant, die cast while in use lockable cover to comply with NEC 406.9.

2.7 POKE-THROUGH ASSEMBLIES

A. Description: Factory-fabricated and -wired assembly of below-floor junction box with multichanneled, through-floor raceway/firestop unit and detachable matching floor service-outlet assembly.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Square D; Schneider Electric USA.
2. Wiremold; Legrand North America, LLC.
3. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial.
4. Or equal.

C. Standards: Comply with scrub water exclusion requirements in UL 514.

D. Service-Outlet Assembly: [Flush type with four simplex receptacles and space for four RJ-45 jacks

E. Size: Selected to fit nominal 4-inch cored holes in floor and matched to floor thickness.

F. Fire Rating: Unit is listed and labeled for fire rating of floor-ceiling assembly.

G. Closure Plug: Arranged to close unused 4-inch cored openings and reestablish fire rating of floor.

H. Wiring Raceways and Compartments: For a minimum of four No. 12 AWG conductors and a minimum of two, four-pair cables.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.

B. Coordination with Other Trades:

1. Protect installed devices and their boxes. Do not place wall finish materials over device boxes, and do not cut holes for boxes with routers that are guided by riding against outside of boxes.
2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
4. Install wiring devices after all wall preparation, including painting, is complete.

C. Conductors:

1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.
2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
3. The length of free conductors at outlets for devices shall comply with NFPA 70, Article 300, without pigtails.
4. Existing Conductors:

    a. Cut back and pigtail, or replace all damaged conductors.
    b. Straighten conductors that remain and remove corrosion and foreign matter.
    c. Pigtailing existing conductors is permitted, provided the outlet box is large enough.

D. Device Installation:

1. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.

E. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

F. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

G. Adjust locations of floor service outlets and service poles to suit arrangement of partitions and furnishings.

3.2 GFCI RECEPTACLES

A. Install non-feed-through GFCI receptacles where protection of downstream receptacles is not required.

3.3 SPECIFIC PURPOSE OUTLET BOXES

A. As fabricated by manufacturers for mounting their equipment.

3.4 IDENTIFICATION

A. Identify each receptacle with panelboard identification and circuit number. Use hot, stamped, or engraved machine printing with black]-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

3.5 FIELD QUALITY CONTROL

A. Tests for Receptacles:

1. Line Voltage: Acceptable range is 105 to 132 V.
2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is unacceptable.
3. Ground Impedance: Values of up to 2 ohms are acceptable.
4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
5. Using the test plug, verify that the device and its outlet box are securely mounted.
6. Tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault-current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.

B. Wiring device will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

END OF SECTION 262726

SECTION 262813 - FUSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Cartridge fuses rated 600 V ac and less for use in the following:

a. Control circuits.
b. Motor-control centers.
c. Panelboards.
d. Switchboards.
e. Enclosed controllers.
f. Enclosed switches.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

E. Product Data: For each type of product. Include construction details, and material descriptions include the following for each fuse type indicated:

1. Catalog sheets.
2. Specifications.
3. Installation instructions.

1.4 MAINTENANCE

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Special tools if required for installation or removal of fuses.

1.5 FIELD CONDITIONS

A. Where ambient temperature to which fuses are directly exposed is less than 40 deg F or more than 100 deg F , apply manufacturer's ambient temperature adjustment factors to fuse ratings.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Mersen Inc.

B. Cooper Industries Inc.'s/Bussman Div.

C. Littlefuse Inc.

D. Source Limitations: Obtain fuses, for use within a specific product or circuit, from single source from single manufacturer.

2.2 FUSES RATED 600V OR LESS

1. Type RK-1: [600]-V, zero- to 600-A rating, 200 kAIC**,** time delay.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Comply with NEMA FU 1 for cartridge fuses.

D. Comply with NFPA 70.

E. Coordinate fuse ratings with utilization equipment nameplate limitations of maximum fuse size and with system short-circuit current levels.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine fuses before installation. Reject fuses that are moisture damaged or physically damaged.

B. Examine holders to receive fuses for compliance with installation tolerances and other conditions affecting performance, such as rejection features.

C. Examine utilization equipment nameplates and installation instructions. Install fuses of sizes and with characteristics appropriate for each piece of equipment.

D. Evaluate ambient temperatures to determine if fuse rating adjustment factors must be applied to fuse ratings.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FUSE APPLICATIONS

A. Cartridge Fuses:

1. Motor Branch Circuits: Class RK1, time delay.
2. Provide open-fuse indicator fuses or fuse covers with open fuse indication.

3.3 INSTALLATION

A. Install fuses in fusible devices. Arrange fuses so rating information is readable without removing fuse.

B. Install spare-fuse cabinet(s) in location shown on the Drawings or as indicated in the field by Director’s Representative.

3.4 IDENTIFICATION

A. Install labels complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems" and indicating fuse replacement information inside of door of each fused switch and adjacent to each fuse block, socket, and holder.

END OF SECTION 262813

SECTION 262816 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Fusible switches.
2. Nonfusible switches.
3. Receptacle switches.
4. Shunt trip switches.
5. Molded-case circuit breakers (MCCBs).
6. Molded-case switches.
7. Enclosures.

1.3 DEFINITIONS

A. NC: Normally closed.

B. NO: Normally open.

C. SPDT: Single pole, double throw.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include nameplate ratings, dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.

1. Enclosure types and details for types other than NEMA 250, Type 1.

2. Current and voltage ratings.
3. Short-circuit current ratings (interrupting and withstand, as appropriate).
4. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices, accessories, and auxiliary components.
5. Include time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device. Provide in PDF electronic format.

E. Shop Drawings: For enclosed switches and circuit breakers.

1. Include plans, elevations, sections, details, and attachments to other work.
2. Include wiring diagrams for power, signal, and control wiring.

F. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

G. Qualification Data: For qualified testing agency.

H. Seismic Qualification Data: Certificates, for enclosed switches and circuit breakers, accessories, and components, from manufacturer.

1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

I. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For enclosed switches and circuit breakers to include in emergency, operation, and maintenance manuals.

1. Manufacturer's written instructions for testing and adjusting enclosed switches and circuit breakers.
2. Time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device. Provide in PDF electronic format.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Fuses: Equal to 10percent of quantity installed for each size and type, but no fewer than three of each size and type.
2. Fuse Pullers: Twofor each size and type.

1.7 QUALITY ASSURANCE

A. Testing Agency Qualifications: Accredited by NETA.

1. Testing Agency's Field Supervisor: Currently certified by NETA to supervise on-site testing.

1.8 FIELD CONDITIONS

A. Environmental Limitations: Rate equipment for continuous operation under the following conditions unless otherwise indicated:

1. Ambient Temperature: Not less than minus 22 deg F and not exceeding 104 deg F.
2. Altitude: Not exceeding 6600 feet.

1.9 WARRANTY

A. Manufacturer's Warranty: Manufacturer and Installer agree to repair or replace components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Oneyear(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Source Limitations: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single manufacturer.

B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for enclosed switches and circuit breakers, including clearances between enclosures, and adjacent surfaces and other items. Comply with indicated maximum dimensions.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.

D. Comply with NFPA 70.

2.2 FUSIBLE SWITCHES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton.
2. Schneider Electric USA (Square D).
3. Siemens Industry, Inc., Energy Management Division.

4. Or equal.

B. Type HD, Heavy Duty:

1. Single throw.
2. Three pole.
3. 240-V ac.
4. 200 A and smaller.
5. UL 98 and NEMA KS 1, horsepower rated, with clips or bolt pads to accommodate specified fuses.
6. Lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

C. Accessories:

1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
3. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
4. Auxiliary Contact Kit: One NO/NC (Form "C") auxiliary contact(s), arranged to activate before switch blades open. Contact rating - [120-V ac].
5. Hookstick Handle: Allows use of a hookstick to operate the handle.
6. Lugs: Mechanical type, suitable for number, size, and conductor material.
7. Service-Rated Switches: Labeled for use as service equipment.

2.3 NONFUSIBLE SWITCHES

A. Manufacturers: Subject to compliance with requirements, [provide products by one of the following:

1. Eaton.
2. Schneider Electric USA (Square D).
3. Siemens Industry, Inc., Energy Management Division.
4. Or equal.

B. Type HD, Heavy Duty, Three Pole, Single Throw, 240V ac, 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

C. Type HD, Heavy Duty, Three Pole, Double Throw, 240V ac, 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

D. Accessories:

1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.

3. Lugs: Mechanical type, suitable for number, size, and conductor material.
4. Service-Rated Switches: Labeled for use as service equipment.

2.4 RECEPTACLE SWITCHES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton.
2. Schneider Electric USA (Square D).
3. Siemens Industry, Inc., Energy Management Division.
4. Or equal.

B. Type HD, Heavy-Duty, Three Pole, Single-Throw Nonfusible Switch: 240 V ac, 30 A; UL 98 and NEMA KS 1; horsepower rated, lockable handle with capability to accept three padlocks; interlocked with cover in closed position.

C. Interlocking Linkage: Provided between the receptacle and switch mechanism to prevent inserting or removing plug while switch is in the on position, inserting any plug other than specified, and turning switch on if an incorrect plug is inserted or correct plug has not been fully inserted into the receptacle.

D. Receptacle: Polarized, three-phase, four-wire receptacle (fourth wire connected to enclosure ground lug).

E. Accessories:

1. Lugs: Mechanical type, suitable for number, size, and conductor material.
2. Service-Rated Switches: Labeled for use as service equipment.

2.5 SHUNT TRIP SWITCHES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Bussmann; Eaton, Electrical Sector.
2. Littelfuse, Inc.
3. Mersen USA.
4. Or equal.

B. General Requirements: Comply withASME A17.1**,** UL 50, and UL 98, with Class J fuse block and 200-kA interrupting and short-circuit current rating.

C. Type HD, Heavy-Duty, Three Pole, Single-Throw Fusible Switch: 240 V ac, 100 A; UL 98 and NEMA KS 1; integral shunt trip mechanism; horsepower rated, with clips or bolt pads to accommodate specified fuses; lockable handle with capability to accept three padlocks; interlocked with cover in closed position.

D. Control Circuit: 120-V ac; obtained from integral control power transformer, with primary and secondary fuses**,** with a control power transformer [**source**] of enough capacity to operate shunt trip, pilot, indicating and control devices.

E. Accessories:

1. Oiltight key switch for key-to-test function.
2. Oiltight greenON pilot light.
3. Isolated neutral lug; 100 percent rating.
4. Mechanically interlocked auxiliary contacts that change state when switch is opened and closed.
5. Form C alarm contacts that change state when switch is tripped.
6. Three-pole, double-throw, fire-safety and alarm relay; 120-V accoil voltage.
7. Three-pole, double-throw, fire-alarm voltage monitoring relay complying with NFPA 72.
8. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
9. Isolated Ground Kit: Internally mounted; insulated, labeled for copper and aluminum neutral conductors.
10. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
11. Auxiliary Contact Kit: One NO/NC (Form "C") auxiliary contact(s), arranged to activate before switch blades open. Contact rating - 120-V ac.
12. Hookstick Handle: Allows use of a hookstick to operate the handle.
13. Lugs: Mechanical type, suitable for number, size, and conductor material.
14. Service-Rated Switches: Labeled for use as service equipment.

2.6 MOLDED-CASE CIRCUIT BREAKERS

A. Manufacturers: Subject to compliance with requirements, [provide products by the following] [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:

1. Eaton.
2. Schneider Electric USA (Square D).
3. Siemens Industry, Inc., Energy Management Division.
4. Or equal.

B. Circuit breakers shall be constructed using glass-reinforced insulating material. Current carrying components shall be completely isolated from the handle and the accessory mounting area.

C. Circuit breakers shall have a toggle operating mechanism with common tripping of all poles, which provides quick-make, quick-break contact action. The circuit-breaker handle shall be over center, be trip free, and reside in a tripped position between on and off to provide local trip indication. Circuit-breaker escutcheon shall be clearly marked on and off in addition to providing international I/O markings. Equip circuit breaker with a push-to-trip button, located on the face of the circuit breaker to mechanically operate the circuit-breaker tripping mechanism for maintenance and testing purposes.

D. The maximum ampere rating and UL, IEC, or other certification standards with applicable voltage systems and corresponding interrupting ratings shall be clearly marked on face of circuit breaker. Circuit breakers shall be 100 percent rated..

E. MCCBs shall be equipped with a device for locking in the isolated position.

F. Lugs shall be suitable for 167 deg F rated wire.

G. Standard: Comply with UL 489 with interrupting capacity to comply with available fault currents.

H. Thermal-Magnetic Circuit Breakers: Inverse time-current thermal element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

I. Adjustable, Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.

J. Electronic Trip Circuit Breakers: Field-replaceable rating plug, rms sensing, with the following field-adjustable settings:

1. Instantaneous trip.
2. Long- and short-time pickup levels.
3. Long- and short-time time adjustments.
4. Ground-fault pickup level, time delay, and I-squared t response.

K. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller, and let-through ratings less than NEMA FU 1, RK-5.

L. Integrally Fused Circuit Breakers: Thermal-magnetic trip element with integral limiter-style fuse listed for use with circuit breaker and trip activation on fuse opening or on opening of fuse compartment door.

M. Ground-Fault Circuit-Interrupter (GFCI) Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip).

N. Ground-Fault Equipment-Protection (GFEP) Circuit Breakers: With Class B ground-fault protection (30-mA trip).

O. Features and Accessories:

1. Standard frame sizes, trip ratings, and number of poles.
2. Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.
3. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge lighting circuits.
4. Ground-Fault Protection: Comply with UL 1053; integrally mounted, self-powered type with mechanical ground-fault indicator; relay with adjustable pickup and time-delay settings, push-to-test feature, internal memory, and shunt trip unit; and three-phase, zero-sequence current transformer/sensor.
5. Shunt Trip: Trip coil energized from separate circuit, with coil-clearing contact.

6. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage without intentional time delay.
7. Electrical Operator: Provide remote control for on, off, and reset operations.

2.7 ENCLOSURES

A. Enclosed Switches and Circuit Breakers: UL 489, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.

B. Enclosure Finish: The enclosure shall be finished with] [gray baked enamel paint, electrodeposited on cleaned, phosphatized steel (NEMA 250 Type 1)

C. Conduit Entry: NEMA 250 Types 4, 4X, and 12 enclosures shall contain no knockouts. NEMA 250 Types 7 and 9 enclosures shall be provided with threaded conduit openings in both endwalls.

D. Operating Mechanism: The circuit-breaker operating handle shall be directly operable through the front cover of the enclosure (NEMA 250 Type 1) \. The cover interlock mechanism shall have an externally operated override. The override shall not permanently disable the interlock mechanism, which shall return to the locked position once the override is released. The tool used to override the cover interlock mechanism shall not be required to enter the enclosure in order to override the interlock.

E. Enclosures designated as NEMA 250 Type 4, 4X stainless steel, 12, or 12K shall have a dual cover interlock mechanism to prevent unintentional opening of the enclosure cover when the circuit breaker is ON and to prevent turning the circuit breaker ON when the enclosure cover is open.

F. NEMA 250 Type 7/9 enclosures shall be furnished with a breather and drain kit to allow their use in outdoor and wet location applications.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine elements and surfaces to receive enclosed switches and circuit breakers for compliance with installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

1. Commencement of work shall indicate Installer's acceptance of the areas and conditions as satisfactory.

3.2 ENCLOSURE ENVIRONMENTAL RATING APPLICATIONS

A. Enclosed Switches and Circuit Breakers: Provide enclosures at installed locations with the following environmental ratings.

1. Indoor, Dry and Clean Locations: NEMA 250, Type 1.
2. Outdoor Locations: NEMA 250, Type 3R.
3. Kitchen Wash-Down Areas: NEMA 250, Type 4X, stainless steel
4. Other Wet or Damp, Indoor Locations: NEMA 250, Type 4.
5. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA 250, Type 12.

3.3 INSTALLATION

A. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

B. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.

C. Install fuses in fusible devices.

D. Comply with NFPA 70 and NECA 1.

3.4 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.

B. Label each enclosure with engraved metal or laminated-plastic nameplate.

3.5 FIELD QUALITY CONTROL

A. Testing Agency: Director’s Representative will engage a qualified testing agency to perform tests and inspections.

B. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

C. Manufacturer's Field Service: Engage a Company Service Advisor to test and inspect components, assemblies, and equipment installations, including connections.

D. Perform tests and inspections with the assistance of a Company Service Advisor.

E. Tests and Inspections for Switches:

1. Visual and Mechanical Inspection:

    a. Inspect physical and mechanical condition.
    b. Inspect anchorage, alignment, grounding, and clearances.
    c. Verify that the unit is clean.
    d. Verify blade alignment, blade penetration, travel stops, and mechanical operation.
    e. Verify that fuse sizes and types match the Specifications and Drawings.

f. Verify that each fuse has adequate mechanical support and contact integrity.
g. Inspect bolted electrical connections for high resistance using one of the two following methods:

1) Use a low-resistance ohmmeter.

a) Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of the lowest value.

2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or NETA ATS Table 100.12.

a) Bolt-torque levels shall be in accordance with manufacturer's published data. In the absence of manufacturer's published data, use NETA ATS Table 100.12.

h. Verify that operation and sequencing of interlocking systems is as described in the Specifications and shown on the Drawings.
i. Verify correct phase barrier installation.
j. Verify lubrication of moving current-carrying parts and moving and sliding surfaces.

2. Electrical Tests:

a. Perform resistance measurements through bolted connections with a low-resistance ohmmeter. Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
b. Measure contact resistance across each switchblade fuseholder. Drop values shall not exceed the high level of the manufacturer's published data. If manufacturer's published data are not available, investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
c. Perform insulation-resistance tests for one minute on each pole, phase-to-phase and phase-to-ground with switch closed, and across each open pole. Apply voltage in accordance with manufacturer's published data. In the absence of manufacturer's published data, use Table 100.1 from the NETA ATS. Investigate values of insulation resistance less than those published in Table 100.1 or as recommended in manufacturer's published data.
d. Measure fuse resistance. Investigate fuse-resistance values that deviate from each other by more than 15 percent.
e. Perform ground fault test according to NETA ATS 7.14 "Ground Fault Protection Systems, Low-Voltage."

F. Tests and Inspections for Molded Case Circuit Breakers:

1. Visual and Mechanical Inspection:

a. Verify that equipment nameplate data are as described in the Specifications and shown on the Drawings.
b. Inspect physical and mechanical condition.

c. Inspect anchorage, alignment, grounding, and clearances.
d. Verify that the unit is clean.
e. Operate the circuit breaker to ensure smooth operation.
f. Inspect bolted electrical connections for high resistance using one of the two following methods:

1) Use a low-resistance ohmmeter.

a) Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of the lowest value.

2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or NETA ATS Table 100.12.

a) Bolt-torque levels shall be in accordance with manufacturer's published data. In the absence of manufacturer's published data, use NETA ATS Table 100.12.

g. Inspect operating mechanism, contacts, and chutes in unsealed units.
h. Perform adjustments for final protective device settings in accordance with the coordination study.

2. Electrical Tests:

a. Perform resistance measurements through bolted connections with a low-resistance ohmmeter. Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
b. Perform insulation-resistance tests for one minute on each pole, phase-to-phase and phase-to-ground with circuit breaker closed, and across each open pole. Apply voltage in accordance with manufacturer's published data. In the absence of manufacturer's published data, use Table 100.1 from the NETA ATS. Investigate values of insulation resistance less than those published in Table 100.1 or as recommended in manufacturer's published data.
c. Perform a contact/pole resistance test. Drop values shall not exceed the high level of the manufacturer's published data. If manufacturer's published data are not available, investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
d. Perform insulation resistance tests on all control wiring with respect to ground. Applied potential shall be 500-V dc for 300-V rated cable and 1000-V dc for 600-V rated cable. Test duration shall be one minute. For units with solid state components, follow manufacturer's recommendation. Insulation resistance values shall be no less than two megohms.
e. Determine the following by primary current injection:

1) Long-time pickup and delay. Pickup values shall be as specified. Trip characteristics shall not exceed manufacturer's published time-current characteristic tolerance band, including adjustment factors.

2) Short-time pickup and delay. Short-time pickup values shall be as specified. Trip characteristics shall not exceed manufacturer's published time-current characteristic tolerance band, including adjustment factors.
3) Ground-fault pickup and time delay. Ground-fault pickup values shall be as specified. Trip characteristics shall not exceed manufacturer's published time-current characteristic tolerance band, including adjustment factors.
4) Instantaneous pickup. Instantaneous pickup values shall be as specified and within manufacturer's published tolerances.

f. Test functionality of the trip unit by means of primary current injection. Pickup values and trip characteristics shall be as specified and within manufacturer's published tolerances.
g. Perform minimum pickup voltage tests on shunt trip and close coils in accordance with manufacturer's published data. Minimum pickup voltage of the shunt trip and close coils shall be as indicated by manufacturer.
h. Verify correct operation of auxiliary features such as trip and pickup indicators; zone interlocking; electrical close and trip operation; trip-free, anti-pump function; and trip unit battery condition. Reset all trip logs and indicators. Investigate units that do not function as designed.
i. Verify operation of charging mechanism. Investigate units that do not function as designed.

3. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
4. Perform the following infrared scan tests and inspections and prepare reports:

a. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each enclosed switch and circuit breaker. Remove front panels so joints and connections are accessible to portable scanner.
b. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each enclosed switch and circuit breaker 11 months after date of Substantial Completion.
c. Instruments and Equipment: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

5. Test and adjust controls, remote monitoring, and safeties. Replace damaged and malfunctioning controls and equipment.

G. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.

H. Prepare test and inspection reports.

1. Test procedures used.
2. Include identification of each enclosed switch and circuit breaker tested and describe test results.
3. List deficiencies detected, remedial action taken, and observations after remedial action.

3.6 ADJUSTING

A. Adjust moving parts and operable components to function smoothly and lubricate as recommended by manufacturer.

B. Set field-adjustable circuit-breaker trip ranges to values indicated on the Drawings.

END OF SECTION 262816

SECTION 264313 - SURGE PROTECTION FOR LOW-VOLTAGE ELECTRICAL POWER CIRCUITS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.2 SUMMARY

A. Section includes:

1. Type 1 surge protective devices.
2. Type 2 surge protective devices.
3. Enclosures.
4. Conductors and cables.

B. Related Requirements:

1. Section 262413 "Switchboards" for integral SPDs installed by switchboard manufacturer.
2. Section 262416 "Panelboards" for integral SPDs installed by panelboard manufacturer.

1.3 DEFINITIONS

A. Inominal: Nominal discharge current.

B. MCOV: Maximum continuous operating voltage.

C. Mode(s), also Modes of Protection: air of electrical connections where the VPR applies.

D. MOV: Metal-oxide varistor; an electronic component with a significant non-ohmic current-voltage characteristic.

E. NRTL: Nationally recognized testing laboratory.

F. OCPD: Overcurrent protective device.

G. SCCR: Short-circuit current rating.

H. SPD: Surge protective device.

I. Type 1 SPDs: Permanently connected SPDs intended for installation between the secondary of the service transformer and the line side of the service disconnect overcurrent device.

J. Type 2 SPDs: Permanently connected SPDs intended for installation on the load side of the service disconnect overcurrent device, including SPDs located at the branch panel.

K. Type 3 SPDs: Point of utilization SPDs.

L. Type 4 SPDs: Component SPDs, including discrete components, as well as assemblies.

M. Type 5 SPDs: Discrete component surge suppressors, such as MOVs that may be mounted on a printed wiring board, connected by its leads or provided within an enclosure with mounting means and wiring terminations.

N. VPR: Voltage protection rating.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

1. Include electrical characteristics, specialties, and accessories for SPDs.
2. NRTL certification of compliance with UL 1449.

    a. Tested values for VPRs.
    b. Inominal ratings.
    c. MCOV, type designations.
    d. OCPD requirements.
    e. Manufacturer's model number.
    f. System voltage.
    g. Modes of protection.

E. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

F. Field quality-control reports.

G. Sample Warranty: For manufacturer's special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For SPDs to include in maintenance manuals.

1.6 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace SPDs that fail in materials or workmanship within five years from date of Substantial Completion.

1.7 Quality Control Submittals:

A. List of Completed Installations: If brand names other than those specified are proposed for use, furnish the name, address, and telephone number of at least 5 comparable installations that can prove the proposed products have operated satisfactorily for one year.

B. Company Field Advisor Data: Include:

1. Name, business address and telephone number of Company Field Advisor secured for the required services.
2. Certified statement from the Company listing the qualifications of the Company Field Advisor.
3. Services and each product for which authorization is given by the Company listed specifically for this project.

PART 2 - PRODUCTS

2.1 TYPE 2 SURGE PROTECTIVE DEVICES (SPDs)

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Eaton.
2. Schneider Electric USA, Inc.
3. Siemens Industry, Inc., Energy Management Division.
4. Or equal.

B. Source Limitations: Obtain devices from single source from single manufacturer.

C. Standards:

1. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 1449, Type 2.
2. Comply with UL 1283.

D. Product Options:

1. Include LED indicator lights for power and protection status.
2. Include internal thermal protection that disconnects the SPD before damaging internal suppressor components.
3. Include NEMA ICS 5, dry Form C contacts rated at 2 A and 24 V ac for remote monitoring of protection status.
4. Include surge counter.

E. Performance Criteria:

1. MCOV: Not less than 125 percent of nominal system voltage for 208Y/120 V and 120/240 V power systems.

2. Peak Surge Current Rating: Minimum single-pulse surge current withstand rating per phase must not be less than 320kA. Peak surge current rating must be arithmetic sum of the ratings of individual MOVs in a given mode.
3. Protection modes and UL 1449 VPR for grounded wye circuits with 208Y/120 V, three-phase, four-wire circuits must not exceed the following:

    a. Line to Neutral: 700 V for 208Y/120 V.
    b. Line to Ground: 700 V for 208Y/120 V.
    c. Neutral to Ground: 700 V for 208Y/120 V.
    d. Line to Line: 1200 V for 208Y/120 V.

4. Protection modes and UL 1449 VPR for 240/120 V, single-phase, three-wire circuits must not exceed the following:

    a. Line to Neutral: 700 V.
    b. Line to Ground: 700 V.
    c. Neutral to Ground: 700 V.
    d. Line to Line: 1200 V.

5. SCCR: Equal or exceed 200 kA.
6. Inominal Rating: 20kA.

2.2 ENCLOSURES

A. Indoor Enclosures: NEMA 250, Type 1.

2.3 CONDUCTORS AND CABLES

A. Power Wiring: Same size as SPD leads, complying with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

B. Provide OCPD and disconnect for installation of SPD in accordance with UL 1449 and manufacturer's written instructions.

C. Install leads between disconnects and SPDs short, straight, twisted, and in accordance with manufacturer's written instructions. Comply with wiring methods in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

1. Do not splice and extend SPD leads unless specifically permitted by manufacturer.
2. Do not exceed manufacturer's recommended lead length.
3. Do not bond neutral and ground.

D. Use crimped connectors and splices only. Wire nuts are unacceptable.

3.2 FIELD QUALITY CONTROL

A. Perform the following tests and inspections with the assistance of a Company Service Advisor:

1. Compare equipment nameplate data for compliance with Drawings and the Specifications.
2. Inspect anchorage, alignment, grounding, and clearances.
3. Verify that electrical wiring installation complies with manufacturer's written installation requirements.

B. SPDs that do not pass tests and inspections will be considered defective.

C. Prepare test and inspection reports.

3.3 STARTUP SERVICE

A. Complete startup checks in accordance with manufacturer's written instructions.

B. Do not perform insulation-resistance tests of the distribution wiring equipment with SPDs installed. Disconnect SPDs before conducting insulation-resistance tests; reconnect them immediately after the testing is over.

C. Energize SPDs after power system has been energized, stabilized, and tested.

3.4 DEMONSTRATION

A. Engage a Company Service Advisor to train Director’s Representative's maintenance personnel to operate and maintain SPDs.

END OF SECTION 264313

SECTION 265119 - LED INTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Downlight.
   2. Recessed, linear.
   3. Strip light.
   4. Surface mount, linear.
   5. Suspended, linear.
   6. Materials.
   7. Luminaire support.

1.3 DEFINITIONS

A. CCT: Correlated color temperature.

B. CRI: Color Rendering Index.

C. Fixture: See "Luminaire."

D. IP: International Protection or Ingress Protection Rating.

E. LED: Light-emitting diode.

F. Lumen: Measured output of lamp and luminaire, or both.

G. Luminaire: Complete lighting unit, including lamp, reflector, and housing.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

1. Arrange in order of luminaire designation.
2. Include data on features, accessories, and finishes.
3. Include physical description and dimensions of luminaires.
4. Include emergency lighting units, including batteries and chargers.
5. Include life, output (lumens, CCT, and CRI), and energy-efficiency data.
6. Photometric data and adjustment factors based on laboratory tests, complying with IES "Lighting Measurements Testing and Calculation Guides" for each luminaire type. The adjustment factors shall be for lamps and accessories identical to those indicated for the luminaire as applied in this Project.

    a. Manufacturers' Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.

E. Shop Drawings: For nonstandard or custom luminaires.

1. Include plans, elevations, sections, and mounting and attachment details.
2. Include details of luminaire assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include diagrams for power, signal, and control wiring.

F. Samples: For each luminaire and for each color and texture with standard factory-applied finish.

G. Samples for Initial Selection: For each type of luminaire with custom factory-applied finishes.

1. Include Samples of luminaires and accessories involving color and finish selection.

H. Samples for Verification: For each type of luminaire.

1. Include Samples of luminaires and accessories to verify finish selection.

I. Product Schedule: For luminaires and lamps. Use same designations indicated on Drawings.

J. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

K. Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Luminaires.
2. Suspended ceiling components.
3. Partitions and millwork that penetrate the ceiling or extend to within 12 inches of the plane of the luminaires.
4. Structural members to which equipment and or luminaires will be attached.
5. Initial access modules for acoustical tile, including size and locations.
6. Items penetrating finished ceiling, including the following:

a. Other luminaires.
b. Air outlets and inlets.
c. Speakers.
d. Sprinklers.
e. Access panels.
f. Ceiling-mounted projectors.

7. Moldings.

L. Qualification Data: For testing laboratory providing photometric data for luminaires.

M. Product Certificates: For each type of luminaire.

N. Product Test Reports: For each type of luminaire, for tests performed by manufacturer and witnessed by a qualified testing agency.

O. Source quality-control reports.

P. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For luminaires and lighting systems to include in operation and maintenance manuals.

1. Provide a list of all lamp types used on Project; use ANSI and manufacturers' codes.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Lamps: Ten for every 100 of each type and rating installed. Furnish at least one of each type.
2. Diffusers and Lenses: One for every 100 of each type and rating installed. Furnish at least one of each type.
3. Globes and Guards: One for every 20 of each type and rating installed. Furnish at least one of each type.

1.7 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications:

1. Luminaire manufacturer's laboratory that is accredited under the NVLAP for Energy Efficient Lighting Products.
2. Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.7, accredited under

the NVLAP for Energy Efficient Lighting Products, and complying with the applicable IES testing standards.

B. Provide luminaires from a single manufacturer for each luminaire type.

C. Each luminaire type shall be binned within a three-step MacAdam Ellipse to ensure color consistency among luminaires.

D. Mockups: For interior luminaires in room or module mockups, complete with power and control connections.

1. Obtain Director Representative's approval of luminaires in mockups before starting installations.
2. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering before shipping.

1.9 WARRANTY

A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.

B. Warranty Period: Five year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Ambient Temperature: 41 to 104 deg F.

B. Altitude: Sea level to 1000 feet.

2.2 LUMINAIRE REQUIREMENTS

A. Refer to the lighting fixture schedule in drawing E502 for a list of interior and exterior fixtures.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps. Locate labels where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.

1. Label shall include the following lamp characteristics:

a. "USE ONLY" and include specific lamp type.
b. Lamp diameter, shape, size, wattage, and coating.
c. CCT and CRI.

D. Recessed luminaires shall comply with NEMA LE 4.

E. California Title 24 compliant.

2.3 DOWNLIGHT – Fixture types E1-E5, Y1, Y2, F1

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1. Prudential lighting
2. Lithonia Lighting; Acuity Brands Lighting, Inc.
3. Elite lighting
4. Cooper Lighting Solutions; Signify North America Corp.
5. Or equal.

B. Nominal Operating Voltage: 120 V ac.

C. Lamp:

1. Minimum – as detailed in the lighting fixture schedule on drawing E502.

2. Minimum allowable efficacy: as detailed in the lighting fixture schedule on drawing E502.
3. CRI: as detailed in the lighting fixture schedule on drawing E502.
4. Rated lamp life of 72000 hours to L70.
5. Dimmable from 100 percent to zero percent of maximum light output.
6. Internal driver.

7. Lens Thickness: as detailed in the lighting fixture schedule on drawing E502.

D. Housings:

1. Extruded-aluminum housing and heat sink.
2. anodized finish (coordinate color with architect before purchase).
3. Universal mounting bracket.
4. Integral junction box with conduit fittings.

E. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent

doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

F. Diffusers and Globes:

1. Adjustable lens.
2. Medium light distribution.
3. Solite frosted lens.
4. Acrylic Diffusers: One hundred percent virgin acrylic plastic, with high resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
5. Glass: Annealed crystal glass unless otherwise indicated.
6. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

G. Standards:

1. ENERGY STAR certified.
2. RoHS compliant.
3. UL Listing: Listed for damp location.
4. Recessed luminaires shall comply with NEMA LE 4.

2.4 RECESSED, LINEAR – Types D1

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Prudential lighting
2. Elite lighting
3. Cooper Lighting Solutions; Signify North America Corp.
4. Or equal.

B. Nominal Operating Voltage: 120 V**.**

C. Lamp:

1. Minimum lumen output: as detailed in the lighting fixture schedule on drawing E502.
2. Minimum allowable efficacy: as detailed in the lighting fixture schedule on drawing E502.
3. CRI: as detailed in the lighting fixture schedule on drawing E502.
4. Rated lamp life of 200,000 hours to L70.
5. Dimmable from 100 percent to zero percent of maximum light output.
6. Internal driver.

7. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

D. Housings:

1. Extruded-aluminum housing and heat sink.
2. Finish to be coordinated with the architect prior to purchase
3. With integral mounting provisions.

E. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Components are

designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

F. Diffusers and Globes:

1. Tempered Fresnel glass
2. Acrylic Diffusers: One hundred percent virgin acrylic plastic, with high resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
3. Glass: Annealed crystal glass unless otherwise indicated.
4. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

G. Standards:
1. RoHS compliant.
2. UL Listing: Listed for damp location.
3. NEMA LE 4.

2.5 STRIP LIGHT – Type ST-1

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Prudential lighting
2. Elite lighting
3. Cooper Lighting Solutions; Signify North America Corp.
4. Or equal.

B. Nominal Operating Voltage: 120 V ac.

C. Lamp:

1. Minimum 6000 lm.
2. Minimum allowable efficacy of 112 lm/W.
3. CRI of 80 CCT of 3500K.
4. Rated lamp life of 50,000 hours to L70.
5. Dimmable from 100 percent to zero percent of maximum light output.
6. Internal driver.
7. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

D. Housings:

1. 22-gauge steel housing.
2. Painted high-gloss baked white enamel finish.
3. With integral mounting provisions.

E. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping of luminaire without use of tools. Components are designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

F. Diffusers and Globes:

1. Frosted lens
2. Acrylic Diffusers: One hundred percent virgin acrylic plastic, with high resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
3. Glass: Annealed crystal glass unless otherwise indicated.
4. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

G. Standards:

1. RoHS compliant.
2. UL Listing: Listed for damp location.

2.6 SURFACE MOUNT, LINEAR – Type A-3, A-5

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Prudential Lighting.
2. Elite Lighting.
3. Cooper Lighting Solutions; Signify North America Corp.
4. Or equal.

B. Nominal Operating Voltage: 120 V ac.

C. Lamp:
1. Minimum lumen output: as detailed in the lighting fixture schedule on drawing E502.
2. Minimum allowable efficacy: as detailed in the lighting fixture schedule on drawing E502.
3. CRI of minimum 80. CCT of 3500k
4. Rated lamp life of 200,000 hours to L70.
5. Dimmable from 100 percent to zero percent of maximum light output.
6. Internal driver.
7. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

D. Housings:

1. Extruded-aluminum housing and heat sink.
2. Finish to be coordinated with the architect prior to purchase
3. With integral mounting provisions.

E. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Components are designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

F. Diffusers and Globes:

1. Clear, UV-stabilized acrylic.
2. Acrylic Diffusers: One hundred percent virgin acrylic plastic, with high resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.

3. Glass: Annealed crystal glass unless otherwise indicated.
4. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

G. Standards:
1. RoHS compliant.
2. UL Listing: Listed for damp location.

2.7 SURFACE MOUNT, LINEAR – Type EL-1

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Acuity Brands.
2. Elite Lighting.
3. Cooper Lighting Solutions; Signify North America Corp.
4. Or equal.

B. Nominal Operating Voltage: 120 V ac.

C. Lamp:

1. Minimum lumen output: 5000lm
2. Minimum allowable efficacy: 107lm/w
3. CRI of minimum 80. CCT of 4000k
4. Rated lamp life of 120,000 hours to L70.
5. Dimmable from 100 percent to zero percent of maximum light output.
6. Internal driver.

D. Housings:

1. Polycarbonate housing fully gasketed wet location rated.
2. With integral mounting provisions.

E. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Components are designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

F. Diffusers and Globes:

1. Frosted Polycarbonate lens.

G. Standards:

1. RoHS compliant.
2. UL Listing: Listed for damp location.
3. IP rated.
4. IK10 rated.

2.8 SUSPENDED, LINEAR - Type A1, A2, A4

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Prudential Lighting.
2. Elite Lighting.
3. Cooper Lighting Solutions; Signify North America Corp.
4. Or equal.

B. Nominal Operating Voltage: 120 V ac.

C. Lamp:

1. Minimum lumen output: as detailed in the lighting fixture schedule on drawing E502.
2. Minimum allowable efficacy: as detailed in the lighting fixture schedule on drawing E502.
3. CRI of minimum 80. CCT of 3500k
4. Rated lamp life of 200,000 hours to L70.
5. Dimmable from 100 percent to zero percent of maximum light output.
6. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

D. Housings:

1. Extruded-aluminum housing and heat sink.
2. Finish to be coordinated with the architect prior to purchase
3. With integral mounting provisions.

E. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Components are designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

F. Diffusers and Globes:

1. Clear, UV-stabilized acrylic.
2. Acrylic Diffusers: One hundred percent virgin acrylic plastic, with high resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
3. Glass: Annealed crystal glass unless otherwise indicated.
4. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

G. Standards:

1. RoHS compliant.
2. UL Listing: Listed for damp location.

2.9 SUSPENDED, LINEAR - Type M1

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Elite Lighting.
2. Prudential Lighting.
3. Cooper Lighting Solutions; Signify North America Corp.
4. Or equal.

B. Nominal Operating Voltage: 120 V ac.

C. Lamp:

1. Minimum lumen output: 2297lm.
2. Minimum allowable efficacy: 71lm/w.
3. CRI of minimum 80. CCT of 3500k.
4. Rated lamp life of 50,0000 hours to L85.
5. Dimmable from 100 percent to zero percent of maximum light output.
6. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

D. Housings:

1. One-piece rigid aluminum extrusion, made of T6063-T5 aluminum
2. Finish to be coordinated with the architect prior to purchase
3. With integral mounting provisions.

E. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Components are designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

F. Diffusers and Globes:

1. White frosted acrylic lens.
2. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

G. Standards:

1. RoHS compliant.
2. UL Listing: Listed for damp location.

2.10 SUSPENDED, LINEAR - Type X1

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Elite Lighting.
2. Prudential Lighting.
3. Cooper Lighting Solutions; Signify North America Corp.
4. Or equal.

B. Nominal Operating Voltage: 120 V ac.

C. Lamp:

1. Minimum lumen output: 4000lm.
2. Minimum allowable efficacy: 82lm/w.
3. CRI of minimum 80. CCT of 3500k.
4. Rated lamp life of 50,0000 hours to L70.
5. Dimmable from 100 percent to zero percent of maximum light output.
6. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

D. Housings:

1. Heavy-duty 20-gauge cold rolled steel body.
2. High-gloss white finish.
3. With integral mounting provisions.

E. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Components are designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

F. Diffusers and Globes:

1. Frosted acrylic lens.
2. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

G. Standards:

1. RoHS compliant.
2. UL Listing: Listed for damp location.

H. RECESSED NON-LINEAR – Type C1 – C5, B3

I. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Prudential Lighting.
2. Elite Lighting.
3. Cooper Lighting Solutions; Signify North America Corp.
4. Or equal.

J. Nominal Operating Voltage: 120 V ac.

K. Lamp:

1. Minimum lumen output: as detailed in the lighting fixture schedule on drawing E502.
2. Minimum allowable efficacy: as detailed in the lighting fixture schedule on drawing E502.
3. CRI of minimum 80. CCT of 3500k.
4. Rated lamp life of 167,000 hours to L70.
5. Dimmable from 100 percent to zero percent of maximum light output.
6. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

L. Housings:

1. Heavy-duty 20-gauge cold-rolled steel.
2. 93% reflective white coat finish.
3. Lay-in ceilings, Slot T, and T-bar suspension systems for 5/8” and 3/8” ceiling thicknesses.

M. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Components are designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

N. Diffusers and Globes:

1. Center acrylic diffuser.
2. Acrylic Diffusers: One hundred percent virgin acrylic plastic, with high resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
3. Glass: Annealed crystal glass unless otherwise indicated.
4. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

O. Standards:

1. ENERGY STAR certified.
2. RoHS compliant.
3. UL Listing: Listed for damp location.

2.11 HIGHBAY NONLINEAR – Type Z1

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Philips Day Brite.
2. Lithonia Lighting; Acuity Brands Lighting, Inc.
3. RAB Lighting.
4. Or equal.

B. Nominal Operating Voltage: 120 V ac

C. Lamp:

1. Minimum 11000 lm.
2. Minimum allowable efficacy of 133lm/W.
3. CRI of 80 CCT of 4000K.
4. Rated lamp life of 100,000 hours to L70.
5. Dimmable from 100 percent to zero percent of maximum light output.
6. Internal driver.
7. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

D. Housings:

1. Die-cast aluminum housing and heat sink.

2. Painted finish; color to be coordinated with the architect prior to purchase.
3. Universal mounting bracket.
4. Integral junction box with conduit fittings.

E. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Components are designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

F. Diffusers and Globes:

1. White acrylic reflector.
2. Acrylic Diffusers: One hundred percent virgin acrylic plastic, with high resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
3. Glass: Annealed crystal glass unless otherwise indicated.
4. Lens Thickness: At least 0.125-inch minimum unless otherwise indicated.

G. Standards:

1. ENERGY STAR certified.
2. RoHS compliant.
3. UL Listing: Listed for damp location.

2.12 MATERIALS

A. Metal Parts:

1. Free of burrs and sharp corners and edges.
2. Sheet metal components shall be steel unless otherwise indicated.
3. Form and support to prevent warping and sagging.

B. Steel:

1. ASTM A36 for carbon structural steel.
2. ASTM A568 for sheet steel.

C. Stainless Steel:

1. Manufacturer's standard grade.
2. Manufacturer's standard type, ASTM A240.

D. Galvanized Steel: ASTM A653.

E. Aluminum: ASTM B209.

2.13 METAL FINISHES

A. Variations in finishes are unacceptable in the same piece. Variations in finishes of adjoining components are acceptable if they are within the range of approved Samples and if they can be and are assembled or installed to minimize contrast.

2.14 LUMINAIRE SUPPORT

A. Single-Stem Hangers: 1/2-inch steel tubing with swivel ball fittings and ceiling canopy. Finish same as luminaire.

B. Wires: ASTM A641, Class 3, soft temper, zinc-coated steel, 12 gage.

C. Rod Hangers: 3/16-inch minimum diameter, cadmium-plated, threaded steel rod.

D. Hook Hangers: Integrated assembly matched to luminaire, line voltage, and equipment with threaded attachment, cord, and locking-type plug.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for luminaire to verify actual locations of luminaire and electrical connections before luminaire installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 TEMPORARY LIGHTING

A. If approved by the Architect, use selected permanent luminaires for temporary lighting. When construction is sufficiently complete, clean luminaires used for temporary lighting and install new lamps.

3.3 INSTALLATION

A. Comply with NECA 1.

B. Install luminaires level, plumb, and square with ceilings and walls unless otherwise indicated.

C. Install lamps in each luminaire.

D. Supports:

1. Sized and rated for luminaire weight.
2. Able to maintain luminaire position after cleaning and relamping.
3. Provide support for luminaire without causing deflection of ceiling or wall.
4. Luminaire-mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight and a vertical force of 400 percent of luminaire weight.

E. Flush-Mounted Luminaires:

1. Secured to outlet box.
2. Attached to ceiling structural members at four points equally spaced around circumference of luminaire.
3. Trim ring flush with finished surface.

F. Wall-Mounted Luminaires:

1. Attached to structural members in walls.
2. Do not attach luminaires directly to gypsum board.

G. Suspended Luminaires:

1. Ceiling Mount:

   a. Two 5/32-inch- diameter aircraft cable supports adjustable to 10 feet in length.
   b. Pendant mount with 5/32-inch- diameter aircraft cable supports adjustable to 10 feet in length.
   c. Hook mount.

2. Pendants and Rods: Where longer than 48 inches, brace to limit swinging.
3. Stem-Mounted, Single-Unit Luminaires: Suspend with twin-stem hangers. Support with approved outlet box and accessories that hold stem and provide damping of luminaire oscillations. Support outlet box vertically to building structure using approved devices.
4. Continuous Rows of Luminaires: Use tubing or stem for wiring at one point and **support** for suspension for each unit length of luminaire chassis, including one at each end.
5. Do not use ceiling grid as support for pendant luminaires. Connect support wires or rods to building structure.

H. Ceiling-Grid-Mounted Luminaires:

1. Secure to any required outlet box.
2. Secure luminaire to the luminaire opening using approved fasteners in a minimum of four locations, spaced near corners of luminaire.
3. Use approved devices and support components to connect luminaire to ceiling grid and building structure in a minimum of four locations, spaced near corners of luminaire.

3.4 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals.

3.5 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
2. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery power and retransfer to normal.

B. Luminaire will be considered defective if it does not pass operation tests and inspections.

C. Prepare test and inspection reports.

3.6 ADJUSTING

A. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting the direction of aim of luminaires to suit occupied conditions. Make up to two visits to Project during other-than-normal hours for this purpose. Some of this work may be required during hours of darkness.

1. During adjustment visits, inspect all luminaires. Replace lamps or luminaires that are defective.
2. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.
3. Adjust the aim of luminaires in the presence of the Architect.

END OF SECTION 265119

SECTION 265213 - EMERGENCY AND EXIT LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Emergency lighting.
2. Exit signs.
3. Materials.
4. Luminaire support components.

1.3 DEFINITIONS

A. CCT: Correlated color temperature.

B. CRI: Color Rendering Index.

C. Emergency Lighting Unit: A lighting unit with internal or external emergency battery powered supply and the means for controlling and charging the battery and unit operation.

D. Fixture: See "Luminaire" Paragraph.

E. Lumen: Measured output of lamp and luminaire, or both.

F. Luminaire: Complete lighting unit, including lamp, reflector, and housing.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of emergency lighting unit, exit sign, and emergency lighting support.

1. Include data on features, accessories, and finishes.
2. Include physical description of the unit and dimensions.
3. Battery and charger for light units.
4. Include life, output of luminaire (lumens, CCT, and CRI), and energy-efficiency data.
5. Include photometric data and adjustment factors based on laboratory tests, complying with IES LM-45, for each luminaire type.

    a. Testing Agency Certified Data: For indicated luminaires and signs, photometric data certified by a qualified independent testing agency. Photometric data for remaining luminaires and signs shall be certified by manufacturer.
    b. Manufacturers' Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.

E. Shop Drawings: For nonstandard or custom luminaires.

1. Include plans, elevations, sections, and mounting and attachment details.
2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include diagrams for power, signal, and control wiring.

F. Samples: For each product and for each color and texture specified.

G. Samples for Initial Selection: For each type of luminaire with factory-applied finishes.

H. Samples for Verification: For each type of luminaire.

1. Include Samples of luminaires and accessories to verify finish selection.

I. Product Schedule:

1. For emergency lighting units. Use same designations indicated on Drawings.
2. For exit signs. Use same designations indicated on Drawings.

J. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

K. Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Luminaires.
2. Suspended ceiling components.
3. Partitions and millwork that penetrate the ceiling or extend to within 12 inches of the plane of the luminaires.
4. Structural members to which equipment will be attached.
5. Size and location of initial access modules for acoustical tile.
6. Items penetrating finished ceiling including the following:

    a. Other luminaires.

b. Air outlets and inlets.
c. Speakers.
d. Ceiling-mounted projectors.
e. Sprinklers.
f. Access panels.

7. Moldings.

L. Qualification Data: For testing laboratory providing photometric data for luminaires.

M. Product Certificates: For each type of luminaire.

N. Sample Warranty: For manufacturer's warranty.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For luminaires and lighting systems to include in emergency, operation, and maintenance manuals.

1. Provide a list of all lamp types used on Project; use ANSI and manufacturers' codes.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Lamps: 10 for every 100 of each type and rating installed. Furnish at least one of each type.
2. Luminaire-mounted, emergency battery pack: One for every 20 emergency lighting units. Furnish at least one of each type.
3. Diffusers and Lenses: One for every 100 of each type and rating installed. Furnish at least one of each type.
4. Globes and Guards: One for every 20 of each type and rating installed. Furnish at least one of each type.

1.7 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications: Luminaire manufacturer's laboratory that is accredited under National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products and complying with applicable IES testing standards.

B. Mockups: For interior luminaires in room or module mockups, complete with power and control connections.

1. Obtain Architect's approval of luminaires and signs in mockups before starting installations.
2. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

C. List of Completed Installations: If brand names other than those specified are proposed for use, furnish the name, address, and telephone number of at least 5 comparable installations which can prove the proposed products have operated satisfactorily for 3 years.

D. Service Availability: A fully equipped service organization shall be available to service the completed Work.

1.8 MAINTENANCE

A. Special Tools: Furnish 2 tools to remove and install fasteners on fixtures equipped with vandal resistant fasteners.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering before shipping.

1.10 WARRANTY

A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two year(s) from date of Substantial Completion.

B. Special Warranty for Emergency Lighting Batteries: Manufacturer's standard form in which manufacturer of battery-powered emergency lighting unit agrees to repair or replace components of rechargeable batteries that fail in materials or workmanship within specified warranty period.

1. Warranty Period for Emergency Power Unit Batteries: Five years from date of Substantial Completion. Full warranty shall apply for the entire warranty period.
2. Warranty Period for Self-Powered Exit Sign Batteries: Five years from date of Substantial Completion. Full warranty shall apply for first year and prorated warranty for the remaining six years.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR EMERGENCY LIGHTING

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. NRTL Compliance: Fabricate and label emergency lighting units, exit signs, and batteries to comply with UL 924.

C. Comply with NFPA 70 and NFPA 101.

D. Comply with NEMA LE 4 for recessed luminaires.

E. Comply with UL 1598 for fluorescent luminaires.

F. Lamp Base: Comply with ANSI C81.61 or IEC 60061-1.

G. Bulb Shape: Complying with ANSI C79.1.

H. Internal Type Emergency Power Unit: Self-contained, modular, battery-inverter unit, factory mounted within luminaire body and compatible with ballast.

1. Emergency Connection: Operate one lamp(s) continuously at an output of 1100 lumens each upon loss of normal power. Connect unswitched circuit to battery-inverter unit and switched circuit to luminaire ballast.
2. Operation: Relay automatically turns lamp on when power-supply circuit voltage drops to 80 percent of nominal voltage or below. Lamp automatically disconnects from battery when voltage approaches deep-discharge level. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
3. Environmental Limitations: Rate equipment for continuous operation under the following conditions unless otherwise indicated:

    a. Ambient Temperature: Less than 0 deg F or exceeding 104 deg F, with an average value exceeding 95 deg F over 24 hours.
    b. Ambient Storage Temperature: Not less than minus 4 deg F and not exceeding 140 deg F.
    c. Humidity: More than 95 percent (condensing).
    d. Altitude: Exceeding 3300 feet.

4. Test Push-Button and Indicator Light: Visible and accessible without opening luminaire or entering ceiling space.

    a. Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
    b. Indicator Light: LED indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.

5. Battery: Sealed, maintenance-free, lead-acid type.
6. Charger: Fully automatic, solid-state, constant-current type with sealed power transfer relay.
7. Remote Test: Switch in handheld remote device aimed in direction of tested unit initiates coded infrared signal. Signal reception by factory-installed infrared receiver in tested unit triggers simulation of loss of its normal power supply, providing visual confirmation of either proper or failed emergency response.

8. Integral Self-Test: Factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and a flashing red LED.

2.2 EXIT SIGNS

A. General Requirements for Exit Signs: Comply with UL 924; for sign colors, visibility, luminance, and lettering size, comply with authorities having jurisdiction.

B. Internally Lighted Signs:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Signify Cloride
    b. Cooper Lighting Solutions; Signify North America Corp.
    c. Exitronix.
    d. Siltron Illumination Inc.
    e. Or equal.

2. Operating at nominal voltage of 120 V ac.
3. Lamps for AC Operation:

    a. LEDs; 50,000 hours minimum rated lamp life.

4. Self-Powered Exit Signs (Battery Type): Internal emergency power unit.

2.3 MATERIALS

A. Metal Parts:

1. Free of burrs and sharp corners and edges.
2. Sheet metal components shall be steel unless otherwise indicated.
3. Form and support to prevent warping and sagging.

B. Doors, Frames, and Other Internal Access:

1. Smooth operating, free of light leakage under operating conditions.
2. Designed to permit relamping without use of tools.
3. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

C. Diffusers and Globes:

1. Tempered Fresnel glass
2. Glass: Annealed crystal glass unless otherwise indicated.
3. Lens Thickness: At least 0.125 inch minimum unless otherwise indicated.

D. Housings:

1. Extruded aluminum housing and heat sink**.**
2. powder coat finish.

E. Conduit: Electrical metallic tubing, minimum 3/4 inch in diameter.

2.4 METAL FINISHES

A. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.5 LUMINAIRE SUPPORT COMPONENTS

A. Support Wires: ASTM A641/A641M, Class 3, soft temper, zinc-coated steel, 12 gage.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for conditions affecting performance of luminaires.

B. Examine roughing-in for luminaire to verify actual locations of luminaire and electrical connections before luminaire installation.

C. Examine walls, floors, roofs, and ceilings for suitable conditions where emergency lighting luminaires will be installed.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with NECA 1.

B. Install luminaires level, plumb, and square with ceilings and walls unless otherwise indicated.

C. Supports:

1. Sized and rated for luminaire and emergency power unit weight.
2. Able to maintain luminaire position when testing emergency power unit.
3. Provide support for luminaire and emergency power unit without causing deflection of ceiling or wall.

4. Luminaire-mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire and emergency power unit weight and vertical force of 400 percent of luminaire weight.

D. Wall-Mounted Luminaire Support:

1. Attached to structural members in walls.
2. Do not attach luminaires directly to gypsum board.

E. Suspended Luminaire Support:

1. Pendants and Rods: Where longer than 48 inches, brace to limit swinging.
2. Stem-Mounted, Single-Unit Luminaires: Suspend with twin-stem hangers. Support with approved outlet box and accessories that hold stem and provide damping of luminaire oscillations. Support outlet box vertically to building structure using approved devices.
3. Continuous Rows of Luminaires: Use tubing or stem for wiring at one point and tubing or rod for suspension for each unit length of luminaire chassis, including one at each end.
4. Do not use ceiling grid as support for pendant luminaires. Connect support wires or rods to building structure.

F. Ceiling Grid Mounted Luminaires:

1. Secure to any required outlet box.
2. Secure emergency power unit using approved fasteners in a minimum of four locations, spaced near corners of emergency power unit.
3. Use approved devices and support components to connect luminaire to ceiling grid and building structure in a minimum of four locations, spaced near corners of luminaire.

3.3 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals.

3.4 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation for 90 minutes. Verify transfer from normal power to battery power and retransfer to normal.

B. Luminaire will be considered defective if it does not pass operation tests and inspections.

C. Prepare test and inspection reports.

3.5 STARTUP SERVICE

A. Perform startup service:

1. Charge batteries minimum of one hour and depress switch to conduct short-duration test.

2. Charge batteries minimum of 24 hours and conduct one-hour discharge test.

3.6 ADJUSTING

A. Adjustments: Within 12 months of date of Substantial Completion, provide on-site visit to do the following:

1. Inspect all luminaires. Replace lamps, batteries, signs, or luminaires that are defective.

a. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.

2. Conduct short-duration tests on all emergency lighting.

END OF SECTION 265213

SECTION 265619 - LED EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Luminaire-mounted photoelectric relays.
2. Luminaire types.
3. Materials.
4. Finishes.
5. Luminaire support components.

1.3 DEFINITIONS

A. CCT: Correlated color temperature.

B. CRI: Color rendering index.

C. Fixture: See "Luminaire."

D. IP: International Protection or Ingress Protection Rating.

E. Lumen: Measured output of lamp and luminaire, or both.

F. Luminaire: Complete lighting unit, including lamp, reflector, and housing.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of luminaire.

1. Arrange in order of luminaire designation.
2. Include data on features, accessories, and finishes.
3. Include physical description and dimensions of luminaire.
4. Lamps, include life, output (lumens, CCT, and CRI), and energy-efficiency data.
5. Photometric data and adjustment factors based on laboratory tests, complying with IES Lighting Measurements Testing and Calculation Guides, of each luminaire type. The adjustment factors shall be for lamps and accessories identical to those indicated for the luminaire as applied in this Project

    a. Manufacturer's Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the NVLAP for Energy Efficient Lighting Products.

6. Wiring diagrams for power, control, and signal wiring.
7. Photoelectric relays.
8. Means of attaching luminaires to supports and indication that the attachment is suitable for components involved.

E. Shop Drawings: For nonstandard or custom luminaires.

1. Include plans, elevations, sections, and mounting and attachment details.
2. Include details of luminaire assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include diagrams for power, signal, and control wiring.

F. Samples: For each luminaire and for each color and texture indicated with factory-applied finish.

G. Product Schedule: For luminaires and lamps. Use same designations indicated on Drawings.

H. Delegated-Design Submittal: For luminaire supports.

1. Include design calculations for luminaire supports**.**

I. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

J. Qualification Data: For testing laboratory providing photometric data for luminaires.

K. Product Certificates: For each type of the following:

1. Luminaire.
2. Photoelectric relay.

L. Product Test Reports: For each luminaire, for tests performed by manufacturer and witnessed by a qualified testing agency.

M. Source quality-control reports.

N. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For luminaires and photoelectric relays to include in operation and maintenance manuals.

1. Provide a list of all lamp types used on Project. Use ANSI and manufacturers' codes.
2. Provide a list of all photoelectric relay types used on Project; use manufacturers' codes.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Lamps: Ten for every 100 of each type and rating installed. Furnish at least one of each type.
2. Glass, Acrylic, and Plastic Lenses, Covers, and Other Optical Parts: One for every 100 of each type and rating installed. Furnish at least one of each type.
3. Diffusers and Lenses: One for every 100 of each type and rating installed. Furnish at least one of each type.
4. Globes and Guards: One for every 20 of each type and rating installed. Furnish at least one of each type.

1.7 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications:

1. Luminaire manufacturers' laboratory that is accredited under the NVLAP for Energy Efficient Lighting Products.

B. Provide luminaires from a single manufacturer for each luminaire type.

C. Each luminaire type shall be binned within a three-step MacAdam Ellipse to ensure color consistency among luminaires.

D. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

E. Mockups: For exterior luminaires, complete with power and control connections.

1. Obtain Architect's approval of luminaires in mockups before starting installations.
2. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed work.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering prior to shipping.

1.9 FIELD CONDITIONS

A. Verify existing and proposed utility structures prior to the start of work associated with luminaire installation.

B. Mark locations of exterior luminaires for approval by Architect prior to the start of luminaire installation.

1.10 WARRANTY

A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures, including luminaire support components.
b. Faulty operation of luminaires and accessories.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

Warranty Period: 2 year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 LUMINAIRE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. NRTL Compliance: Luminaires shall be listed and labeled for indicated class and division of hazard by an NRTL.

C. UL Compliance: Comply with UL 1598 and listed for wet location.

D. Lamp base complying with ANSI C81.61 or IEC 60061-1.

E. Bulb shape complying with ANSI C79.1.

F. CRI of minimum 80 CCT of 3000 K

G. L70 lamp life of 50,000 hours.

H. Lamps dimmable from 100 percent to 0 percent of maximum light output.

I. Internal driver.

J. Nominal Operating Voltage: 120 V ac.

K. Lamp Rating: Lamp marked for outdoor use.

L. Source Limitations:
1. For luminaires, obtain each color, grade, finish, type, and variety of luminaire from single source with resources to provide products of consistent quality in appearance and physical properties.

2.2 LUMINAIRE-MOUNTED PHOTOELECTRIC RELAYS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Intermatic, Inc.
2. Lutron Electronics Co., Inc.
3. NSI Industries (Tork).
4. Or equal.

B. Comply with UL 773 or UL 773A.

C. Contact Relays: Factory mounted, single throw, designed to fail in the on position, and factory set to turn light unit on at 1.5 to 3 fc and off at 4.5 to 10 fc with 15-second minimum time delay. Relay shall have directional lens in front of photocell to prevent artificial light sources from causing false turnoff.

1. Relay with locking-type receptacle shall comply with ANSI C136.10.
2. Adjustable window slide for adjusting on-off set points.

2.3 LUMINAIRE TYPES

A. Area and Site:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Lumecon.
b. Kim Lighting; Hubbell Incorporated, Lighting.
c. Lithonia Lighting; Acuity Brands Lighting, Inc.
d. Or equal.

2. Luminaire Shape: Square
3. Mounting: Building with a two-piece die-cast aluminum housing
4. Luminaire-Mounting Height: as noted on the architect's elevation drawings.

5. Diffusers and Globes: Anti-UV prismatic translucent lens
6. Housing:

    a. Die-cast aluminum housing and heat sink.
    b. painted finish; to be coordinated with the architect before purchase.

2.4 FINISHES

A. Variations in Finishes: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

B. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.

C. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
2. Natural Satin Finish: Provide fine, directional, medium satin polish (AA-M32); buff complying with AA-M20 requirements; and seal aluminum surfaces with clear, hard-coat wax.
3. Class I, Clear-Anodic Finish: AA-M32C22A41 (Mechanical Finish: Medium satin; Chemical Finish: Etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.
4. Class I, Color-Anodic Finish: AA-M32C22A42/A44 (Mechanical Finish: Medium satin; Chemical Finish: Etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker), complying with AAMA 611.

    a. Color: Black

D. Factory-Applied Finish for Steel Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1 or SSPC-SP 8.
2. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.

    a. Color:

        1) As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for luminaire electrical conduit to verify actual locations of conduit connections before luminaire installation.

C. Examine walls, roofs, and canopy ceilings and overhang ceilings for suitable conditions where luminaires will be installed.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 TEMPORARY LIGHTING

A. If approved by the Architect, use selected permanent luminaires for temporary lighting. When construction is substantially complete, clean luminaires used for temporary lighting and install new lamps.

3.3 GENERAL INSTALLATION REQUIREMENTS

A. Comply with NECA 1.

B. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.

C. Install lamps in each luminaire.

D. Fasten luminaire to structural support.

E. Supports:

1. Sized and rated for luminaire weight.
2. Able to maintain luminaire position after cleaning and relamping.
3. Support luminaires without causing deflection of finished surface.
4. Luminaire-mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight and a vertical force of 400 percent of luminaire weight.

F. Wall-Mounted Luminaire Support:

1. Attached to a minimum 1/8 inch backing plate attached to wall structural members.

G. Wiring Method: Install cables in raceways. Conceal raceways and cables.

H. Install luminaires level, plumb, and square with finished grade unless otherwise indicated.

I. Coordinate layout and installation of luminaires with other construction.

J. Adjust luminaires that require field adjustment or aiming. Include adjustment of photoelectric device to prevent false operation of relay by artificial light sources, favoring a north orientation.

K. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.

3.4 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals.

3.5 FIELD QUALITY CONTROL

A. Inspect each installed luminaire for damage. Replace damaged luminaires and components.

B. Perform the following tests and inspections with the assistance of a Company Service Advisor:

1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
2. Verify operation of photoelectric controls.

C. Illumination Tests:

1. Measure light intensities at night. Use photometers with calibration referenced to NIST standards. Comply with the following IES testing guide(s):

   a. IES LM-64.
   b. IES LM-72.

2. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.

D. Luminaire will be considered defective if it does not pass tests and inspections.

E. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

3.6 DEMONSTRATION

A. Engage a Company Service Advisor to train Director's Representative maintenance personnel to adjust, operate, and maintain luminaires and photocell relays.

3.7 ADJUSTING

A. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting the direction of aim of luminaires to suit occupied conditions. Make up to two visits to Project during other-than-normal hours for this purpose. Some of this work may be required during hours of darkness.

1. During adjustment visits, inspect all luminaires. Replace lamps or luminaires that are defective.
2. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.
3. Adjust the aim of luminaires in the presence of the Architect.

END OF SECTION 265619

SECTION 283101 - PROTECTED PREMISES FIRE ALARM SYSTEM

PART 1 - GENERAL

1.1 REFERENCES

A. Underwriters Laboratories Inc.

B. National Fire Protection Association Standard 72.

1.2 DEFINITIONS

A. Initiating Device Circuit: A circuit to which automatic or manual initiating devices are connected where the signal received does not identify the individual device operated. Example:

1. Circuits from FACP to non-addressable signal initiating devices.

B. Notification Appliance Circuit: A circuit or path directly connected to a notification appliance. Example:

1. Circuits from FACP to notification appliances.

C. Signaling Line Circuit: A circuit or path between any combination of circuit interfaces, control units, or transmitters over which multiple system input signals or output signals, or both are carried. Examples:

1. Circuits from FACP to addressable devices.

D. Operating Mode:

1. Private Mode:

a. Audible and visible signaling only to those persons directly concerned with the implementation and direction of emergency action initiation and procedure in the area protected by the fire alarm system, and:
b. Audible and visible signaling only to those persons within special designated areas where private mode operation is specified to be applicable.

2. Public Mode: Audible and visible signaling to occupants or inhabitants of the area protected by the fire alarm system.

1.3 SYSTEM DESCRIPTION

A. The system operates as a multiplexed protected premises fire alarm monitoring and control system.

1. In Building With One Fire Alarm Control Panel: Changes in the status of monitored points are indicated at the microprocessor based main fire alarm control panel (MFACP).

    a. The MFACP continually monitors the communications and data processing cycles of the micro-processor. Upon MFACP failure, an audible and visible alarm activates at the MFACP.

2. Smoke detectors and smoke sensors operate in conjunction with the systems' alarm verification program.

    a. The alarm verification operation is selectable by zone for smoke detectors and by individual devices for smoke sensors.
    b. The activation of any smoke detector within its zone initiates the alarm verification program.

        1) The panel resets the activated detector and waits for a second alarm activation. If, within one minute, a second alarm is reported from any detector within the zone, the system alarms. If no second alarm within one minute, the system resumes normal operation.

    c. The system can display the number of times (tally) a smoke detector zone or smoke sensor has gone into a verification mode. A trouble condition occurs when the tally reaches a pre-programmed number.

3. Smoke sensors act as intelligent and addressable devices. The smoke sensor converts the condition of its smoke sensing chamber to an analog value. This analog value is digitized and transmitted to the FACP.

    a. Actual smoke density and temperature measurements are referenced from average sample measurements and are compared to programmable values of threshold sensitivity.
    b. Sensor "dirty" and "excessively dirty" trouble conditions are reported automatically through a maintenance advisory and alert program procedure.
    c. The system continuously performs an automatic self-test routine on each sensor that checks sensor electronics to ensure the accuracy of the values being transmitted to the FACP(s). Sensors that fail are identified and indicate a trouble condition.
    d. System automatically performs NFPA 72 sensor sensitivity testing by:

        1) Frequent routine individual sensor alarm simulation testing.
        2) Trouble signal when sensor is outside its acceptable sensitivity range.

4. System individually identifies each addressable initiating device and other addressable monitor functions using multiplexing techniques.
5. System is capable of individually operating each alarm notification appliance, and other control functions, using multiplexing techniques.
6. Alarms are processed by the system at 3 levels of priority:

    a. Fire alarms, supervisory, and trouble signals take precedence in that respective order of priority, over all other signals.
    b. Other alarms that require interaction by the attendant have the second level of priority.

c. Monitored points that do not require interaction by the attendant are the third level of priority.

7. Alarms, supervisory signals, and trouble signals are distinctively and descriptively annunciated.

   a. Fire alarm signals are distinctive in sound from other signals, and this sound is not used for any other purpose.
   b. Supervisory signals are distinctive in sound from other signals.

      1) System differentiates between supervisory device activation and trouble (wiring faults) on independent supervisory service initiating circuits.

   c. Trouble signals are indicated by distinctive audible signals. Exception: The same sound may be used for both supervisory signal and trouble signal if distinction is made between signals by visible annunciation.

8. Switches for silencing audible trouble and supervisory signals transfers the audible signal to an identified lamp or other visible indicator adjacent to the switches. The visible indication persists until the condition has been corrected. The audible signal sounds when the switch is in its silence position and no trouble or supervisory condition exists.

   a. Trouble silencing switch does not prevent sounding of supervisory signal. Subsequent supervisory signals from other zones causes the supervisory signal to resound. A switch left in the silence position where there is no supervisory off-normal signal operates a visible signal silence indicator and causes the trouble signal to sound until the switch is returned to normal.
   b. A silenced audible trouble signal resounds at programmable time intervals (every 24 hours or less) as a reminder that the trouble condition has not been corrected. Re-sounded signal is retransmitted to all locations required of the original trouble signal.

9. System visible and audible trouble signals and supervisory signals and visible indication of their restoration is indicated at the MFACP.

   a. Monitoring of ground fault conditions indicate a ground fault trouble condition at the MFACP.

10. Access to the system functions are controlled thru at least 3 levels of access security to prevent program modifications or use by unauthorized personnel:

    a. At the lowest level of access the system automatically receives, displays and prints alarms, and performs control-by-event life safety functions. The attendant has minimum access to the system functions:

       1) Alarm acknowledge.
       2) Silence alarms.
       3) Perform other basic system functions that require interaction by the attendant (cannot change program parameters).

    b. At mid-level of access, the attendant may change user programmable parameters.

c. At the highest level of access, programs may be modified by the system manager (life safety control-by-event programs may be field or factory modified).
d. System access functions (log on, log off, access level authority) are displayed and printed with date, time, and person's name.

11. Summary reports are displayed at the MFACP upon appropriate function command. Active control points are identified by an assigned message. Spare control points are identified by a point number. The summary reports can be interrupted and terminated and the system returned to normal operation by a manual reset control or automatically if the system senses a change of status signal. The summary reports include:

    a. Current Alarm, Trouble, and Supervisory Conditions: Lists all points not in normal state (display).
    b. Alarm historical log report.
    c. Trouble and supervisory historical log report.
    d. All Points: Lists every point in the system and current status of the point (display).
    e. Control by Event Programs: Lists data for event-initiated programs (display.
    f. Control by Time Programs: Lists data for time-initiated programs (display).
    g. Diagnostics:

        1) Alarm verification cycles initiated by a smoke detector zone or individual smoke sensors.
        2) Smoke sensor service report: Device number, device type, custom label, presently selected alarm set point information, present average value, present value, peak observed values, service status.
        3) Smoke sensor status report: Device number, device type, custom label, present sensitivity in % for smoke sensors and in degrees for temperature sensors, present status, and sensor range (normal, almost dirty, dirty).
        4) Devices that fail automatic tests.
        5) Walk test reports.

12. Life safety control-by-event functions are retained in a non-volatile programmable memory and are not alterable through normal operation of the system.

    a. The life safety control-by-event control points may be manually operated at any time by authorized personnel thru appropriate system commands.

13. User programmable control-by-event functions may be programmed thru appropriate system commands to automatically activate any user programmable control point upon a status change from any programmable monitor point.

    a. The user programmable control-by-event control points may be manually operated at any time by the authorized personnel thru appropriate system commands.

14. User programmable parameters for automatic time-initiated functions (start/stop, on/off, secure/access, etc.) may be added, omitted and altered thru appropriate system commands.

    a. The time-initiated user programmable control points may be manually operated at any time by authorized personnel thru appropriate system commands.

15. An attendant at a remote IBM compatible personal computer may dial in over a telephone line to access the system data. The attendant has minimum access to the following system summary reports:

    a. Standby battery and UPS condition summary.
    b. Alarm summary.
    c. Supervisory signal summary.
    d. Trouble condition summary.
    e. Control-by-event summary.
    f. Programmable automatic time initiated-event summary.

B. The MFACP activates immediately and performs its alarm functions upon receipt of system alarm condition thru actuation of automatic or manual initiating devices:

1. The MFACP sounds its audible alarm and illuminates its system alarm lamp or flashing display.

    a. The audible alarm pulses until the system acknowledge button is depressed.
    b. The system alarm lamp remains illuminated until the alarm condition has been corrected and the system reset.

2. The MFACP displays the point and type of alarm condition. Addressable devices are individually identified. Groups of non-addressable devices are identified by zones.
3. The fire department is automatically called.
4. The MFACP activates a relay through the municipal connection and transmits the alarm condition to the central station service.
    a. Trouble conditions received at the protected premises control unit (MFACP), including loss of primary or secondary power are also transmitted to the supervising station facility meeting requirements of NFPA308.4.4.2. Relays or modules providing transmission of trouble conditions to the supervising station are arranged to provide fail-safe operation.
    b. For system test, a switch in the MFACP enables an authorized person to prevent a signal transmission to the supervising station facility. When disconnected, a system trouble condition is indicated, also, a separate lamp illuminates indicating the disconnected mode.

5. An authorized person at the MFACP presses the acknowledge button which silences its audible alarm and causes a display of the assigned message for the point in alarm with date, time and an acknowledge prefix.
6. A procedure sign located at building entrance instructs personnel on procedure to be followed in the event of a fire.

    a. Visible signal illuminates drawing attention to the procedure sign.

C. Life Safety Control-By-Event Functions: The MFACP immediately performs life safety control-by-event functions upon system alarm condition:

1. Building manager alarm annunciators are activated in mechanical equipment rooms, drawing attention to the alarm condition.

2. Private mode audible signals have a sound level of not less than 45 dBA at 10 Feet, or more than 120 dBA at the minimum hearing distance from the audible appliance. Also, the audible signal has a sound level at least 10 dBA above the average ambient sound level or 5 dBA above the maximum sound level having a duration of at least 60 seconds, whichever is greater, measured 5 feet above the floor in the occupiable area.

    a. 45 dBA private mode audible signals sound in:

        1) Elevator cars.
        2) Restrooms.

3. Private mode audible signals in mechanical equipment rooms sound have a sound level of not less than 100 dBA at 10 feet, nor more than 120 dBA at the minimum hearing distance from the audible appliance. Also, the audible signal has a sound level at least 10 dBA above the average ambient sound level or 5 dBA above the maximum sound level having a duration of at least 60 seconds, whichever is greater, measured 5 feet above the floor.
4. Public mode audible notification appliances sound an ANSI S3.41 evacuation signal throughout the building.
5. Audible alarm notification appliances sound a public mode ANSI S3.41 evacuation signal in the alarm signal initiation zone and other zones in accordance with the buildings fire evacuation plan. Evacuation signal is synchronized within each notification zone.
6. Public mode audible notification appliances (vibrating or single stroke bells) sound 4 rounds of a positive non-interfering successive coded alarm signal.
7. Public mode audible alarm signals have a sound level of not less than 75 dBA at 10 feet nor more than 120 dBA at the minimum hearing distance from the audible appliance. Also, the audible signal has a sound level at least 15 dBA above the average ambient sound level or 5 dBA above the maximum sound level having a duration of at least 60 seconds (whichever is greater) measured 5 feet above the floor in each occupiable area.
8. The system allows an authorized person to:

    a. Silence any alarm signal in progress through a silence command, but subsequent actuation of initiating devices on other initiating device circuits or subsequent actuation of addressable initiating devices on signaling line circuits causes the system to resound the alarm.

        1) Silencing of an audible alarm does not cancel any visible zone alarm indicators.
        2) A silencing means that it is left in the “off” position when there is no alarm operates an audible trouble signal until the means is restored to normal.

    b. Activate the alarm notification appliances on selected floors, and all floors.

        1) Visible indicators in the RA/CC at the MFACP indicate on/off status of the alarm notification appliances.

9. Alarm signal does not sound in stairwells or elevators.
10. Actuation of smoke detecting devices in stairwells, or elevator shafts do not sound the alarm signal, but activates all other system alarm functions.
11. Public and private mode visible alarm notification appliances illuminate and flash a fire warning signal.

a. Public mode flash rate does not exceed 2 flashes per second, nor less than one flash every second throughout the listed voltage range of the appliance.

1) The maximum pulse duration is 0.2 seconds with a maximum duty cycle of 40 percent. The pulse duration is defined as the time interval between initial and final points of 10 percent of maximum signal.

a) NYSUFP and BC 1060.2(a)(7), in schools for the deaf, required fire alarm systems shall be provided with red signal lights in rooms where students congregate, in addition to the sounding devices.

2) The light source is clear or nominal white and does not exceed 1000 candela (effective intensity).

b. All strobes are synchronized to flash simultaneously to reduce the probability of photo-sensitive reactions.
c. Visible alarms continue to flash until the initiating devices are restored to normal condition and the system is manually reset.

12. Locked doors for re-entry from exit stairwells, exit doors, and emergency exits release their fail safe door lock mechanisms so that associated doors may be opened.
13. Selected HVAC equipment (ventilating fans, air handling units) shut down.

a. Fire alarm zones are coordinated with the smoke control zones that they actuate.
b. Actuation of air duct smoke detecting devices used solely for HVAC system
c. Each air distribution system supply, return, and exhaust fan can be manually stopped by the attendant at the MFACP during an emergency.
d. An emergency switch for each system ventilating an assembly space is located to enable manual shut down of the system in case of fire or smoke. A sign located adjacent to the switch states instructions for system shut down.

14. Smoke detectors listed for use in air distribution systems and located as indicated below, automatically stop their respective fan(s) on detecting the presence of smoke:

a. Downstream of the air filters and ahead of any branch connections in air supply systems having a capacity greater than 2000 $ft.^3$/min.
b. At each story prior to the connection to a common return and prior to any recirculation or fresh air inlet connection in air return systems having a capacity greater than 15,000 $ft.^3$/min. and serving more than one story.

15. Safety controls operate for every system using recirculated air and serving an area of public assembly, or more than one fire area, or more than one story of a building:

a. When the air in the system contains smoke of predetermined intensity or has an abnormal rise in temperature, the fans causing normal circulation in such area stops and requires manual reset at the fire alarm control panel.

16. Automatic devices for systems ventilating high hazard spaces stop the fans when the air in the system contains smoke of a predetermined quantity or has an abnormal rise in temperature. Controls require manual reset.
17. Fire dampers and smoke dampers close.

a. Actuation of air duct smoke detecting devices used solely for the closing of dampers sounds the alarm signal and activates all other MFACP alarm functions.
b. Attendant at the MFACP may manually position the smoke dampers.
c. Smoke dampers that isolate the air-handling system close automatically when the system is not in operation.
d. Smoke dampers installed in smoke barriers may remain open during fan shutdown provided that their associated controlling damper actuators and smoke detecting devices remain operational. Dampers close automatically when the fan system they are serving is not in operation.
e. Dampers in HVAC systems serving computer areas and automatic fire and smoke dampers installed where ducts pass through fire-resistant-rated construction operate upon activation of smoke detecting devices and by operation of the computer room disconnecting means for all electronic equipment, dedicated HVAC systems servicing the computer room, and uninterruptible power supplies.

18. Elevator hoistway heat and smoke vents open when the associated smoke detecting devices are actuated. Visible indicators in the RA/CC's illuminate, indicating which vents are open.
19. Phase I automatic elevator recall for fire fighter's service operates upon actuation of an elevator lobby smoke detecting device (excluding the designated floor lobby smoke detecting device) or actuation of an associated hoistway or machine room smoke detecting device. All elevators that service that lobby return non-stop to the designated floor. (If the smoke detecting device at the designated floor is activated, the elevators that serve that level return non-stop to the alternate floor).

    a. Each elevator lobby, hoistway smoke detecting device is capable of initiating elevator recall when all other devices on the same initiating device circuit have been manually or automatically placed in the alarm condition.
    b. The elevator automatic (smoke detecting devices) and manual (two and three position key switches) Phase I Emergency Recall Operation and the Phase II Emergency In-Car Operation operate in accordance with the applicable ANSI/ASME A17.1 Rules 211.3 thru 211.8 and NFPA 72 3-9.3.
    c. For each group of elevators, three separate elevator control circuits terminate at the designated elevator controller.
    d. The smoke detecting devices actuate the three elevator control circuits as follows:

        1) The smoke detecting devices located in the designated elevator recall lobby actuates the first elevator control circuit. In addition, where the elevator is equipped with front and rear doors, the smoke detecting devices in both lobbies at the designated level actuate the first elevator control circuit.

            a) The first control circuit prevents recalling the elevators and discharging passengers to the designated floor when the designated floor is the fire location, and to provide for an alternate recall location when the designated floor is reporting a fire condition;

        2) The smoke detecting devices in the remaining elevator lobbies actuate the second elevator control circuit.

a) The second control circuit provides standard recall to the designated floor when any other elevator lobby or hoistway smoke detecting device is in alarm;

3) The smoke detecting devices in elevator hoistways actuate the third elevator control circuit.

a) The third control circuit is for the safety of the fire fighters who may be using the elevators to bring equipment to staging areas. This circuit also overrides the fire fighter's key operation and brings the elevators to a safe level of discharge prior to equipment shutdown due to fire in hoistway or machine room. The circuit also sounds a warning in the elevator cab notifying the fire fighters using the elevator to immediately move to a safe floor and exit the elevators.

20. Each elevator lobby and hoistway smoke detecting device, when actuated, initiates a system alarm condition. The alarmed zone, or addressable device is visibly annunciated at the MFACP associated with the elevators.

a. Additionally, the hoistway smoke detecting devices visibly annunciate at the MFACP separately and distinctly from other visible annunciation, to alert fire fighters and other emergency personnel that the elevators are no longer safe to use due to smoke and fire intrusion into the hoistways.

21. Elevator Shutdown Before Sprinkler Operation:

a. Dedicated elevator shutdown ICU's located in each elevator machine room, in conjunction with heat detecting devices located within two feet of each sprinkler head monitors the hoistways and machine rooms for heat/fire conditions.

1) The heat detecting device has both a lower temperature rating and a higher sensitivity as compared to the sprinkler, to ensure heat detecting device response prior to sprinkler head operation.
2) The elevator shutdown ICU's and heat detecting devices are independent of the sprinkler system.

b. Smoke detecting devices located in each hoistway monitor the hoistways and machine rooms for smoke/fire conditions. The smoke detecting devices are connected to system ICU's. The smoke detecting devices are not connected to the elevator shutdown ICU's. Sequence of Events:

1) Smoke in a machine room or hoistway during the initial stages of a fire activate the system smoke detecting devices, causing the system to perform the elevator recall functions.
2) As the intensity of the fire builds, the elevator shutdown heat detecting devices actuate, causing the elevator shutdown ICU to shunt trip the circuit breaker serving the main power line to affected elevators prior to the application of water. The sprinkler system operates independently after the affected elevator has shutdown.

3) Activation of elevator machine room or hoistway heat detecting devices are indicated by an audible alarm and a visible indicator in the MFACP.

c. Control circuits to shut down elevator power are monitored for presence of operating voltage. Loss of power to the control circuit for the disconnecting means causes a supervisory signal to be indicated at the MFACP. Refer to NFPA 72 A-3.9.4.4 for a typical method of providing elevator power shunt trip supervisory signal.

22. Emergency lighting energizes.

D. Personnel may use the elevator zoned two-way voice communication system master station (Section 142871) located at the MFACP to communicate with persons responsible for building safety.

E. User Programmable Control-By-Event Functions:

1. Operation of photo cell on the building causes activation of exterior lighting on and activation of fence lighting, parking lot lighting and street lighting.
2. Activation of high level alarm contacts in sewage pump control panel is indicated by a supervisory signal at the MFACP and a visible indicator in the RA/CC.
3. The door status conditions (open, closed) are indicated by visible indicators at the MFACP. Doors located on the First Floor, Lobby, may be unlocked with commands from the MFACP.
4. The Computer Room (second Floor):

a. Electric power status to the interlock and shutdown devices is indicated by a supervisory signal and visible indicators at the MFACP.

F. An authorized person manually resets the system at the MFACP at conclusion of alarm condition. When an alarm condition is corrected, a display occurs at the MFACP stating the assigned reset message for the point in alarm with the date, time and reset suffix.

1. Manually resetting the system requires only one operation.
2. Resetting the system does not disturb system control points or functions.

G. Primary and Secondary Power Supplies:

1. Failure of primary power supplies automatically transfers the affected portions of the system to the secondary power supplies:

a. Initiating, notification, , visible indication and supervisory functions of the system are transferred without loss to the secondary power supplies.

1) Ground fault indication, and battery trouble conditions, are not required to transfer to the secondary power supplies.

b. System power requirements are transferred to the secondary power supplies except door hold open devices, door lock releases, controls for selected HVAC equipment, fire dampers, and smoke dampers.
c. Audible and visible indication of alarm condition when operating system on secondary power supply is:

1) Sounding of the MFACP's audible alarm.
2) Illumination of the MFACP's system alarm lamp or flashing display.

2. Utilizing the secondary battery power supplies, the system operates under maximum normal load conditions for 24 hours and then is capable of operating all alarm notification appliances used for evacuation for 5 minutes.

a. At the end of the time period the secondary battery power supplies also have capacity to operate the rolling fire shutter, fire door and heat and smoke roof vent emergency electric release devices.

1) The maximum power required to operate each heat and smoke roof vent emergency electric release device is 2.5 amperes at 24Vdc for 1 minute.

3. Upon restoration of primary power supply, the system reverts to normal operation without loss, attendant intervention, or manual re-start procedures.

H. Monitoring Integrity of Installation Conductors and Other Signaling Channels:

1. Performance of Signaling Line Circuits:
a. Circuits from MFACP to Addressable Devices: NFPA 72, Class B, Style 4. A print-out and display occurs to identify trouble conditions.

2. Performance of Initiating Device Circuits:

a. Circuits from MFACP to Initiating Devices (Fire Alarm, Sprinkler): NFPA 72, Class B, Style C. A print-out and display occurs to identify trouble conditions.

3. Performance of Notification Appliance Circuits:

a. Circuits from MFACP to Notification Appliances: NFPA 72, Class B, Style Y. A print-out and display occurs to identify trouble conditions.

4. Monitoring Integrity of Power Supplies:

a. Primary and secondary power supplies are monitored for presence of voltage at the point of connection to the system. Failure of either supply results in a system trouble condition.
b. An audible and visible alarm display indicates failure of the primary (main) power supplies, within the system, at the MFACP.
c. The system also monitors the secondary (battery) power supplies for battery trouble conditions (low voltage/no batteries, high current and charging current).

I. Interconnection of Fire Safety Control Functions:

1. A listed relay or other listed appliance connected to the fire alarm system is used to initiate control of protected premises fire safety functions and is located within 3 feet of the controlled circuit or appliance.

a. The installation wiring between the fire alarm control unit and the relay or other appliance is monitored for integrity.

b. Relays and appliances that operate on loss of power are considered self-monitoring for integrity.

2. The method(s) of interconnection between the fire alarm system and controlled electrical and mechanical systems is monitored for integrity and is achieved by one of the following recognized means:

   a. Electrical contacts listed for the connected load.
   b. Listed digital data interfaces such as serial communication parts and gateways.
   c. Other listed methods.

3. Fire safety functions do not interfere with other operations of the fire alarm system.

   a. Fire safety function control devices and gateways are listed as compatible with the fire alarm control unit so as to prevent interference with control unit operation caused by controlled devices and to ensure transmission of data to operate the controlled devices.

4. Controls provided specifically for the purpose of manually overriding automatic fire safety functions provide visible indication of the status of the associated control circuits.

   a. Status indicators for emergency equipment and fire safety functions are arranged to reflect the actual status of the associated equipment or function.

5. Where the fire alarm system is a component of a life safety network, and it communicates data to other systems providing life safety functions:

   a. The path for communicating data is monitored for integrity, including the physical communication media and the ability to maintain intelligible communications.
   b. Data received from the network does not affect the operation of the fire alarm system in any way other than to display the status of life safety network components.
   c. Where non-fire alarm systems are interconnected to the fire alarm system using a network or other digital communication techniques; a signal (for example, heartbeat, poll, ping, query) is generated between the fire alarm system and the non-fire alarm system. Failure of proper receipt by the fire alarm system of confirmation of the transmission indicates a trouble condition.

J. Sprinkler System Alarm and Supervision:

1. Flow of water through a waterflow fire alarm switch causes a system alarm.
2. Supervision of sprinkler system signal attachments (sprinkler valve supervisory switches, pressure switches, etc.) are arranged to indicate circuit trouble and supervisory signal conditions at the MFACP for each circuit.

   a. Removal of covers from water flow alarm switches indicates trouble conditions at the MFACP.

3. Control valves in the sprinkler system are supervised to initiate 2 separate and distinct signals at the MFACP, indicating movement of the valve from its normal position.

a. The off-normal signal is initiated during the first 2 revolutions of a hand wheel or during 1/5 of the travel distance of the valve control apparatus from its normal position.
b. The second signal indicates restoration of the valve to its normal position. (The off-normal signal remains until the valve is restored to its normal position).

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Waiver of Submittals: The "Waiver of Certain Submittal Requirements" in Section 013300 does not apply to this Section.

E. Submittals Package: Submit the shop drawings, product data, and quality control submittals specified below at the same time as a package.

1. Company Field Advisor Letter: With the submittals package include a letter from the Company Field Advisor stating that he/she has reviewed the Submittals Package for accuracy and completeness, and approves all materials and installation methods included in the Submittals Package.

F. Shop Drawings:

1. Composite wiring and/or schematic diagrams of the complete system as proposed to be installed (standard diagrams will not be acceptable).

a. Indicate circuits which are power-limited if power-limited wiring is proposed for use.
b. For 2-hour fire rated cable assemblies show proposed routes and installation details (include UL classification data, listing and system number).
c. Include transient surge and lightning protection grounding details for signaling line circuits, initiating device circuits, and ac power conductors entering and leaving each fire alarm control panel.

G. Product Data:

1. Catalog sheets, specifications and installation instructions.
2. Bill of materials.
3. Detailed description of system operation. Format similar to SYSTEM DESCRIPTION.
4. Sample procedure, programming and print-out for alarm, acknowledgment, and system reset.
5. Total electrical load of the complete system in supervisory and alarm conditions.

a. Include for each system component that utilizes batteries the battery ampere-hour capacity recommended for each component by the Company producing the system, for the specified duration.

6. Statement from the Company producing the system, for each size and type of single conductor and multiconductor cable proposed for use, indicating that the electrical characteristics meet the requirements of the Company.
7. Data from the Company furnishing the products, proving that detection devices that receive their power from the initiating device circuit or a signaling line circuit of a fire alarm control unit are UL listed for use with the control unit.

    a. Submit copy of the control unit "Installation Manual Wiring Diagrams" that were a part of the UL "UOJZ" approval process showing that the proposed products, circuits, and wiring diagrams are UL listed "Control Units System (UOJZ)" for use with the control panel.
    b. Submit data proving that the software and firmware is listed for use with the control panel.
    c. Submit data proving that the initiating devices are listed for the intended application. Also for specific applications, such as:

        1) Air duct smoke detecting devices, show listing indicating complete range of air velocity, temperature and humidity expected at the device when the air handling system is operated.
        2) Smoke detecting devices installed in supply air duct downstream of the fan and filters, show detector listed for the air velocity present.
        3) For smoke detecting devices installed in return air system, show listing for the air velocity present where the air leaves each smoke compartment, or in the duct system before the air enters the return air system common to more than one smoke compartment.

    d. Submit data proving that relays and appliances connected to the fire alarm system, which are used to initiate control of fire safety functions, are listed for the purpose.
    e. Submit data proving that the method(s) of monitoring the connection between the fire alarm system and controlled electrical and mechanical systems for integrity are listed for the purpose.

8. Detailed description of procedure proposed to test individual initiating devices.

    a. Include product information pertaining to the test equipment that will be used to perform the tests.
    b. Include certified statement that the proposed test method meets the test requirements of NFPA 72 and UL 268 (cite reference to the applicable NFPA and UL paragraphs).

9. Name, address and telephone number of nearest fully equipped service organization.

    a. Include list of service technicians who are NICET Level II or higher Fire Alarm Systems certified.

10. Response time index comparison between the elevator hoistway and machine room heat detecting devices and sprinkler heads proving that the heat detecting devices will respond and will cause elevator power shutdown prior to sprinkler operation.

H. Quality Control Submittals:

1. Copy of license required by New York State General Business Law Article 6-D for installing Fire Alarm Systems.

    a. Also include copy of identification card issued by the Licensee for each person who will be performing the Work.

2. Company Field Advisor Data: Include:

    a. Name, business address and telephone number of Company Field Advisor secured for the required services.
    b. Certified statement from the Company listing the qualifications of the Company Field Advisor.
    c. Copy of NICET Letter of Approval indicating Level III or higher Fire Alarm Systems certification.
    d. Services and each product for which authorization is given by the Company, listed specifically for this project.

3. Outline of Onsite Training Programs Required of Company Field Advisor:

    a. Provide a separate outline of the training programs to be used to train the facility personnel, including:

        1) System overview.
        2) System programming.
        3) Operation of system equipment.
        4) System maintenance.
        5) Estimated length (time) of each segment.

I. Contract Closeout Submittals:

1. System acceptance test report.
2. Certificates:

    a. Affidavit, signed by the Company Field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly.
    b. NFPA Record of Completion (NFPA 72 Figure 1-6.2.1).

3. Operation and Maintenance Data:

    a. Deliver 2 copies, covering the installed products, to the Director's Representative. Include:

        1) Operation and maintenance data for each product.

2) Complete point to point wiring diagrams of entire system as installed. Identify all conductors and show all terminations and splices. (Identification shall correspond to markers installed on each conductor.)
3) Name, address, and telephone number of nearest fully equipped service organization.
4) A suggested maintenance and testing program that will ensure operational integrity of the smoke control functions of the system.

1.5 QUALITY ASSURANCE

A. Equipment Qualifications For Products Other Than Those Specified:

1. At the time of submission provide written notice to the Director of the intent to propose an "or equal" for products other than those specified. Make the "or equal" submission in a timely manner to allow the Director sufficient time to review the proposed product, perform inspections and witness test demonstrations.
2. If products other than those specified are proposed for use furnish the name, address, and telephone numbers of at least 5 comparable installations that can prove the proposed products have performed satisfactorily for 3 years. Certify in writing that the owners of the 5 comparable installations will allow inspection of their installation by the Director's Representative and the Company Field Advisor.

    a. Make arrangements with the owners of 2 installations (selected by the Director) for inspection of the installations by the Director's Representative. Also obtain the services of the Company Field Advisor for the proposed products to be present. Notify the Director a minimum of 3 weeks prior to the availability of the installations for the inspection, and provide at least one alternative date for each inspection.
    b. Only references from the actual owner or owner's representative (Security Supervisor, Maintenance Supervisor, etc.) will be accepted. References from dealers, system installers or others, who are not the actual owners of the proposed products, are not acceptable.

        1) Verify the accuracy of all references submitted prior to submission and certify in writing that the accuracy of the information has been confirmed.

3. The product manufacturer shall have test facilities available that can demonstrate that the proposed products meet the contract requirements.

    a. Make arrangements with the test facility for the Director's Representative to witness test demonstrations. Also obtain the services of the Company Field Advisor for the proposed product to be present at the test facility. Notify the Director a minimum of 3 weeks prior to the availability of the test facility, and provide at least one alternative date for the testing.

4. Provide written certification from the manufacturer that the proposed products are compatible for use with all other equipment proposed for use for this system and meet all contract requirements.

B. UL Listing: The system shall be listed in the UL Fire Protection Equipment Directory under product category "Control Units System (UOJZ)".

C. Test Facility: The Company producing the system shall have test facilities available that can demonstrate that the proposed system meets contract requirements.

D. Company Field Advisor: Company Field Advisor shall be National Institute for Certification in Engineering Technologies (NICET) certified as Level III or higher Fire Alarm Protection/Fire Alarm Systems Engineering Technician.

1. Secure the services of a Company Field Advisor for a minimum of 40 working hours at the contract site for the following:

a. Render advice regarding installation and final adjustment of the system.
b. Assist in initial programming of the system.
c. Render advice on the suitability of each signal initiating device for its particular application.
d. Witness final system test and then certify with an affidavit that the system is installed in accordance with the contract documents and is operating properly.
e. Train facility personnel on the operation, programming and maintenance of the system (minimum of two 3-hour sessions).
f. Explain available service programs to facility supervisory personnel for their consideration.

1.6 MAINTENANCE

A. Service Availability: A fully equipped service organization capable of guaranteeing response time within 8 hours to service calls shall be available 24 hours a day, 7 days a week to service the completed Work.

1. Service organization personnel shall include service technicians who are National Institute for Certification in Engineering Technologies (NICET) certified as Level II or higher Fire Alarm Protection/Fire Alarm System Engineering Technician.

B. Spare Parts:

1. 50 percent spare of each type fuse.
2. 30 percent spare of each type lamp (except LED type).
3. 10 percent spare of each type initiating device.
4. 10 percent spare of each type notification appliance.
5. Two tools to remove and install each type and size of vandal resistant fastener.
6. Twenty-four code locator cards (minimum size 5 x 8 inches) with the codes and location associated with each code imprinted thereon.
7. Twenty-four card holders for code locator cards.

PART 2 - PRODUCTS

2.1 MAIN FIRE ALARM NETWORK

A. Network: Edwards' Systems Technology's (Unit of GS Building Systems Corp.) EST-4X Notifier Fire Systems Noti(Fire(Net, or Simplex Time Recorder Co. 4120:

1. Equip the fire alarm control panel and other network devices with network interface modules able to function with the type of wiring specified for the network communication bus signaling line circuit.

B. Fire Alarm Control Panels: Edwards EST-4, IO, Notifier's AFP-200, AFP-300, AFP-400, AFP-1010, AM2020, Simplex's 4120, 4100, 4020, 4010:

1. Base selection of each fire alarm control panel upon its capacity and capabilities to the specific requirements of the system at the panels' location.
2. Permanently record the installed software and firmware version number within each fire alarm control panel.
3. 14 gage metal cabinet. Size as recommended by the Company producing the system.

    a. Control switches, inaccessible behind hinged and locked door.
    b. Alarm display and lamps visible when door is closed.

4. Annunciator (or display) that individually identifies addressable devices and identifies groups of non-addressable devices by zones.
5. Do not load visible alarm appliance circuit outputs to more than 70 percent of the FACP's power limited rating.
6. Input circuits suitable for operation on 120Vac primary (main) power supply and 24 Vdc secondary (battery) power supply.
7. 24 Vdc Secondary (Battery) Power Supplies: Sealed, lead-acid gelled electrolyte or maintenance free lead-calcium batteries:

    a. Ampere-hour capacity to operate under load conditions specified in SYSTEM DESCRIPTION.
    b. Battery charger with charging characteristics as recommended by battery manufacturer.
    c. Meters for battery voltage and charging current.
    d. Batteries and charger integrally mounted or separate cabinet mounted as recommended by the company producing the system.

8. Accessories as required for each FACP perform its required functions upon failure of network communications.
9. Transient surge and lightning protection for signaling line circuits, initiating device circuits, and ac power conductors entering and leaving each fire alarm control panel:

    a. City Connection Circuit Wiring (reverse polarity type): UL listed to Standard 497A;
    b. Signaling Line Circuits and Initiating Device Circuits: UL listed to Standard 497B; Edwards' LTP, Notifier's T11325-2M, or Simplex's 2081-9027, 2081-9028, 2081-9034, 2081-9043.
    c. AC Power Conductors: Edwards' TSP, Notifier's or Simplex's 2081-9033, 2081-9042.

C. Remote Auxiliary Power Supplies: Edwards' BPS, Notifier's FCPS-24, Simplex's 2080 Series:

1. 14 gage surface mounted metal cabinet. Size as recommended by the Company producing the system.
2. Control switches inaccessible behind hinged and locked door.

3. Input circuit suitable for operation on 120Vac primary (main) power supply.
4. Regulated and filtered 24 Vdc output.
5. 24 Vdc Secondary (Standby) Power Supply: Sealed, lead-acid gelled electrolyte or maintenance free lead-calcium batteries:
6. Ampere-hour capacity to operate under load conditions specified in SYSTEM DESCRIPTION.
7. Battery charger with charging characteristics as recommended by battery manufacturer.
8. Meters for battery voltage and charging current.
9. Batteries and charger integrally mounted or separate cabinet mounted as recommended by the Company producing the system.
10. Activated by host FACP via signaling line circuit loop thru addressable modules:

    a. Addressable control monitor activates the power supply outputs.
    b. Addressable monitor module senses power supply trouble conditions.
    c. Supervised power supply, battery, and notification appliance circuits.

11. Individual Addressable Module (IAM): Edwards' SIGA-CT1, SIGA-CT2, SIGA-MM1, SIGA-WTM, SIGA-UM, Notifiers FMM-101, or Simplex's 2190-9172, 2190-9173.
12. Addressable Zone Adapter Module Control and Monitor Relays (ZAM): Edwards' SIGA-CC1, SIGA-CC2, SIGA-UM, SIGA-CR, Notifier's FMM-1, FZM-1, FCM-1, FRM-1, or Simplex's 2190-9163, 2190-9164, 2190-9155, 2190-9156, 2190-9173.
13. Include 24V dc auxiliary circuit(s) as required by RANM type to suit relay operations for control, monitoring, or supervisory functions; or interconnection of fire safety control functions.

D. Remote Annunciator/Control Centers (RA/CC's): Edwards' 2-3 ANN/D, 2-6 ANN/D, 3-ANN, Notifier's INA/ACS, or Simplex's Network Node Unit, with:

1. Surface mounted enclosure.
2. LCD that is capable of displaying all system points.
3. Master enable/disable key switch for all control switches behind hinged and locked door having windows for visibility of system functions.
4. Annunciator modules for visible indication of specific life safety control-by-event functions:

    a. Status of alarm notification appliances.

5. Annunciator modules for visible indication of specific user programmable control-by-event functions specified in SYSTEM DESCRIPTION. Identify each visible indicator with appropriate message.
6. Switch modules for manual operation of specific life safety control-by-event control points:

    a. Alarm notification appliances.

7. Switch modules for manual operation of each user programmable control-by-event control point that is utilized for this project.
8. Switch modules for manual operation of each user programmable automatic time-initiated control point that is utilized for this project.

2.2 INITIATING DEVICES

A. General:

1. Fire detection devices that receive their power from the initiating device circuit or a signaling line circuit of a fire alarm control unit shall be listed for use with the control unit.
2. Where individually identifiable (addressable) devices are required, but not available from the Company producing the system, either:

a. Use non-addressable devices and individually wire each device to the FACP's as separate monitor points, making each non-addressable device individually identifiable, or:
b. Employ remote addressable network modules to make each non-addressable device individually addressable.

B. Ceiling Mounted Detecting devices (Non-Addressable, Non-Intelligent):

1. General:

a. Heat detectors, ionization type smoke detectors, and photoelectric type smoke detectors shall have common mounting base that accommodates interchanging of the different type detectors.

2. Smoke Detectors:

a. Ionization Type with LED: Edwards' 6250B, Notifier's 1451, or Simplex's 2098-9576.
b. Photoelectric Type.

1) With 135 degrees F Thermal Device and LED: Edwards' 6270B-003, Notifier's 2451 TH, or Simplex's 2098-9202.
2) With LED: Edwards' 6270B, Notifier's 2451, or Simplex's 2098-9201.

c. Remote Alarm Indicator For Use with Smoke Detectors: LED type indicator mounted on single gang stainless steel faceplate.

3. Heat Detectors:

a. Fixed Temperature:

1) 135 degrees F: Edwards' 293B, Notifier's 5451, or Simplex's 4098 Series.
2) 190/200 degrees F: Edwards' 294B, Notifier's 4451 HT, or Simplex's 4098 Series.

b. Combination Rate-of-Rise/Fixed Temperature:

1) 135 degrees F: Edwards' 291B, Notifier's 5451 TH, or Simplex's 4098 Series.
2) 190/200 degrees F: Edwards' 292B, or Simplex's 4098 Series.

C. Ceiling Mounted Sensors (Intelligent, Addressable, Analog):

1. General:

a. Heat sensors, ionization smoke sensors, and photoelectric smoke sensors shall have common mounting base that accommodates interchanging of the different type sensors.

2. Smoke Sensors:

a. Ionization Type: Edwards' SIGA-IS, Notifier's FSI-751, or Simplex's 4098-9716/9798.
b. Photoelectric Type: Edwards' SIGA-PS, Notifier's FSP-751, or Simplex's 4098-9714/9798.
c. Multi-Sensor Type:

1) Photoelectric/Heat: Edwards' SIGA-PHS 3D or Notifier's FSP-751T
2) Photoelectric/Ionization/Heat: Edwards' SIGA-IPHS 4D or Notifier's IPX-751.

d. Remote Alarm Indicator For Use With Smoke Sensors: Edwards' SIGA-LED, Notifier's RA-400, or Simplex's 4098-9782.

3. Heat Sensors:

a. 135 degrees F (fixed temperature): Edwards' SIGA-HFS, Notifier's FST-751, or Simplex's 4098-9733/9789.
b. 135 degrees F (fixed temperature/R.O.R.): Edwards' SIGA-HRS, Notifier's FST-751R, or Simplex's 4098.

D. Air Duct Smoke Detectors (Non-Addressable):

1. Photoelectric Type: Edwards' 6266B-001, Notifier's DH400P, or Simplex's 2098-9649/9201.

a. Listed for the air velocity present at each air duct detector's location.
b. Sampling tube to suit installation.
c. Local relay (for fire safety control functions from duct detector when applicable):
d. Form C contacts(s) rated minimum 1A @ 28Vdc power-limited, 1/2A @ 120Vac nonpower-limited.
e. 24Vdc auxiliary power circuit(s) as required to suit relay operation and function.

2. Remote Alarm Indicator For Use With Air Duct Smoke Detectors: LED type indicator mounted on single gang stainless steel faceplate.

E. Air Duct Smoke Sensors (Intelligent, Addressable, Analog):

1. Photoelectric Type: Edwards' SIGA-PS w/SIGA-DH, Notifier's FSD-751P, or Simplex's 4098-9752/3 with 4098-9714.

a. Listed for the air velocity present at each air duct smoke sensor's location.

b. Sampling tube to suit installation.
c. Local relay (for fire safety control functions from duct detector when applicable):

1) Relay operation programmable from FACP.
2) Form C contact(s) rated minimum 1A @ 28Vdc power-limited, 1/2A @ 120Vac nonpower-limited.
3) 24Vdc auxiliary power circuit(s) as required to suit relay operation and function.

2. Remote Alarm Indicator For Use With Air Duct Smoke Sensors: LED type indicator mounted on single gang stainless steel faceplate.

F. Flame Detecting Devices (Non-Addressable):

G. Projected Beam Type Detectors (Non-Addressable): Edwards' 6424, Notifier's 6424, or Simplex's 2098 Series.

H. Manual Fire Alarm Boxes:

1. Non-Addressable:

a. Single Action Pull Type: Edwards' 276B Series, Notifier's BNG-1R, or Simplex's 2099-9754 Series.

2. Addressable:

a. Single Action Pull Type: Edwards' SIGA-270, Notifier's, NBG-12LX, or Simplex's 2099-9795.

2.3 NOTIFICATION APPLIANCES

A. General:

1. Provide UL 464 listed audible signal appliances:

a. Classified "Public" or "Private Mode Only" to suit application.
b. Marked "F. A. Service" or "F. A. Service - Private Mode Only" to suit application.

2. Provide UL listed visible signal devices:

a. For private mode applications, UL 1638 "Fire Protective Visible Signaling Appliance".
b. For public mode applications, UL 1971 "Signaling Devices for the Hearing Impaired".
c. For wall mounting or ceiling mounting to suit application.

B. Combination Audible/Visible Appliances - Wall Mounted:

1. Type AV: Edwards' Genesis Series, Notifier's SpectrAlert Series, or Simplex's TrueAlert Series:

a. Xenon flashtube strobe:

1) AV-15: 15 candela.
2) AV-75: 75 candela.
3) AV-110: 110 candela.

b. Clear lens having FIRE imprinted thereon in red letters, or clear lens with red base having FIRE imprinted thereon in white letters.
c. Audible alarm notification appliance as indicated on the drawing.

1) Horn.

d. Surface or flush wall mounted as indicated on the Drawings.

C. Visible Appliances - Wall Mounted:

1. Type V: Edwards' Genesis Series, Notifier's SpectrAlert Series, or Simplex's TrueAlert Series:

a. Xenon flashtube strobe:

1) V-15: 15 candela.
2) V-75: 75 candela.
3) V110: 110 candela.

b. Clear lens having FIRE imprinted thereon in red letters, or clear lens with red base having FIRE imprinted thereon in white letters.
c. Surface or flush wall mounted as indicated on the Drawings.

D. Audible Appliances - Wall Mounted:

1. Horns:

a. Type H: Edwards' Genesis Series, Notifier's SpectrAlert Series, or Simplex's TrueAlert Series:

2. Surface or flush wall mounted as indicated on the Drawings.

a. Type H-1: Edward's 5530D-AW Adaptatone, Notifier's or Simplex's 4901-9813:

3. Surface wall mounted.

a. Selectable multiple tone signals.
b. Suitable for damp and wet locations.

2.4 DIGITAL ALARM COMMUNICATOR SYSTEMS

A. Digital Alarm Communicator Transmitter (DACT): Edwards' FACP module, Notifier's FACP module, or Simplex's Model 2080-9024:

1. Input circuit suitable for operation on 24 Vdc primary and secondary power supplies.

    a. DACT may be separately wall mounted or an integral module in a fire alarm control panel.

2. UL-864 listing.
3. NFPA 72 compliance, operation with two telephone lines.
4. Compatible with central supervising station DACR and regulations.

B. Digital Alarm Communicator Receiver (DACR).

1. The central supervising station DACR is an Ademco Model 685, located at _____.
2. The contact person is _____.

2.5 MODEM UNITS

A. Modems: Edwards' SHM-M/SHM-F, Notifier's TP1-232, or Simplex's 4100-0131 FSK Series:

1. Input circuit suitable for operation on 120 V ac primary (main) power supply and 24 V dc secondary (standby) power supply.
2. Full duplex operation.
3. UL-864 listing.
4. Dedicated leased line operation.
5. RS232C to DC converter.
6. DC to RS232C converter.
7. Surface mounted cabinets, housing components of each unit.

2.6 AUTOMATIC FIRE SUPPRESSION SYSTEM SIGNAL ATTACHMENTS

A. General:

1. Use non-addressable devices and individually wire each device to the FACP's as separate monitor points, making each non-addressable device individually identifiable, or:
2. Employ remote addressable network modules to make each non-addressable device individually addressable.

2.7 PROTECTIVE DEVICES

1. Edwards' STI Series Stopper II, Notifier's STI Stopper II, Safety Technology International Inc.'s STI Stopper II, or Simplex's 2099 Series (STI) including:

    a. Batteries.
    b. Weatherproof shield for damp and wet locations.
    c. Mounting accessories.

B. Steel Web Guards.

1. For Smoke and Heat Detection Devices: Edwards' 1206B, Notifier's STI Steel Web Stoppers, Safety Technology International Inc.'s STI Steel Web Stoppers, or Simplex's 2098 Series.
2. Steel Web Guards for General Application (Horns, Strobes, Beam Detectors, Speakers, Bells, etc.):

a. Construction:

1) All welded 7 gage wire.
2) Nickel plated finish with lacquer coating.

b. Manufacturer: Chase Security Systems, Inc. 5947 North Milwaukee Avenue, Chicago, IL 60646, Telephone (773) 775-7148, FAX (773) 594-0078.

2.8 TERMINAL STRIP CABINETS

A. Lockable, vandal resistant, surface mounted cabinets constructed of 14 gage steel, size as recommended by the Company producing the system. Equip cabinets with barrier type double screw terminals rated 300 V minimum, meeting UL 94 requirements for materials classed 94 V-0. Use identification strips, tags or labels to identify each conductor. Paint cabinets fire department red and stencil on front in 1/2 inch high white letters, the purpose of each terminal strip cabinet.

2.9 POWER-LIMITED FIRE ALARM CIRCUIT CONDUCTORS

A. Reference the following specifications for additional fire alarm wiring information:

1. 260523 - Control voltage electrical power cables.
2. 283101 – Protected premises fire alarm systems.

B. All electrical characteristics shall meet the requirements of the Company producing the system (conductor to conductor capacitance, dc resistance, velocity of propagation etc.).

C. Multiconductor Cables NFPA 70 type FPLP, FPLR, FPL:

1. Insulated copper conductors.
2. Conductors twisted, shielded and jacketed as recommended by the Company producing the system.
3. Voltage rating of not less than 300 volts (Voltage rating not marked on cable except where cable has multiple listings and voltage marking is required for one or more of the listings).

D. Other types of cables may be used in accordance with NFPA 70 Table 760-61 "Cable Uses and Permitted Substitutions", as approved, if listed as being suitable for the purpose.

E. Where fire alarm cables are installed below 7'0" above finished floor or where installed exposed in areas susceptible to physical damage, cables shall be installed in conduit/raceway as per NFPA 70, section 760.

2.10 NONPOWER-LIMITED FIRE ALARM CIRCUIT CONDUCTORS

A. Reference the following specifications for additional fire alarm wiring information:

1. 260523 - Control voltage electrical power cables.
2. 283101 – Protected premises fire alarm systems.

B. All electrical characteristics shall meet the requirements of the Company producing the system (conductor to conductor capacitance, dc resistance, velocity of propagation, etc.).

C. Conductors twisted, shielded and jacketed as recommended by the Company producing the system.

D. Single Conductors:

1. No. 18 and No. 16 AWG: Insulated copper conductors suitable for 600 volts, N.E.C. types KF-2, KFF-2, PAFF, PTFF, PF, PFF, PGF, PGFF, RFH-2, RFHH-2, RFHH-3, SF-2, SFF-2, TF, TFF, TFN, TFFN, ZF, ZFF.
2. Larger Than No. 16 AWG: Insulated copper conductors suitable for 600 volts, in compliance with NFPA 70 Article 310.
3. Conductors with other types and thickness of insulation may be used if listed for nonpower-limited fire alarm circuit use.

E. Multiconductor Cables NFPA 70 Types NPLFP, NPLFR, NPLF:

1. Conductors:

a. Conductor Sizes No. 18 and No. 16 AWG: Insulated copper conductors rated 600 volts, NFPA 70 types KF-2, KFF-2, PAFF, PTFF, PF, PFF, PGF, PGFF, RFH-2, RFHH-2, RFHH-3, SF-2, SFF-2, TF, TFF, TFN, TFFN, ZF, ZFF.
b. No. 14 AWG and Larger: Insulated copper conductors suitable for 600 volts, one of the types listed in NFPA 70 Table 310-13 or one that is identified for nonpower-limited fire alarm circuit use.

2. Cable Listing and Marking: NPLFP, NPLFR, and NPLF marked to suit listings and may be marked with a maximum usage voltage rating of 150 volts.

F. Where fire alarm cables are installed below 7’0” above finished floor or where installed exposed in areas susceptible to physical damage, cables shall be installed in conduit/raceway as per NFPA 70, section 760.

2.11 MC CABLE

A. Reference the following specifications for additional fire alarm wiring information:

1. 260523 - Control voltage electrical power cables.
2. 283101 – Protected premises fire alarm systems.

B. Metal-Clad Cable, NFPA 70 Type MC:

1. All electrical characteristics shall meet the requirements of the Company producing the system (conductor to conductor capacitance, dc resistance, velocity of propagation, etc.).
2. Conductors twisted, shielded and jacketed as recommended by the Company producing the system.
3. Interlocked flexible galvanized steel armor sheath conforming to UL requirements for Type MC metal clad cable.
4. Insulated copper conductors suitable for 600 volts:

    a. No. 18 and No. 16 AWG: A type listed in NFPA 70 Table 402-3 with a maximum operating temperature not less than 90°C, or types KF-2, KFF-2, PAF, PAFF, PTFF, PF, PFF, PGF, PGFF, PTF, PTFF, SF-2, SFF-2, ZF, ZFF.
    b. No. 14 AWG and Larger: One of the types listed in NFPA 70 Table 310-13 or of a type identified for use in Type MC cable.

5. Acceptable Companies: AFC Cable System, Inc., Coleman Cable Co.
6. Connectors for MC cable: AFC Fitting Inc.'s AFC Series, Arlington Industries Inc.'s Saddle Grip, or Thomas and Betts Co.'s Tite-Bite with anti-short Bushings.

C. Where fire alarm cables are installed below 7'0" above finished floor or where installed exposed in areas susceptible to physical damage, cables shall be installed in conduit/raceway as per NFPA 70, section 760.

2.12 2-HOUR FIRE RATED CABLE ASSEMBLIES

A. Reference the following specifications for additional fire alarm wiring information:

1. 260523 - Control voltage electrical power cables.
2. 283101 – Protected premises fire alarm systems.

B. Fire Alarm Circuit Integrity (CI) Cable: Cables identified as meeting the requirements for circuit integrity shall have the additional classification using the suffix "CI". Examples: FPLP-CI, FPLR-CI, FPL-CI, NPLFP-CI, NPLFR-CI, NPLP-CI.

1. Cables shall have a minimum 2-hour fire resistance rating for the cable when tested in accordance with the Standard for Tests of Fire Resistive Cables-UL 2196.

C. MI Cable: AFC Cable Systems' MI cable, or BICC/Pyrotenax Mineral Insulated System 1850 Pyrotenax Cable:

1. All electrical characteristics shall meet the requirements of the Company producing the system (conductor to conductor capacitance, dc resistance, velocity of propagation, etc.).
2. Solid copper conductors, twisted, shielded as recommended by the Company producing the system.
3. Seamless copper sheath.
4. Two hour fire resistive rating UL system classified, listed in the UL Fire Resistance Directory product category Electrical Circuit Protective Systems (FHIT) and Fire Resistive Cables (FHJR).
5. PVC or HDPE jacketing (where shown on drawings).

6. Accessories as required for a complete system to suit installation conditions.

D. Other 2-hour Fire Resistive Cables: Listed in UL Buildings Materials Directory, product category Electrical Circuit Protective Systems (FHIT), and Fire Resistive Cables (FHJR):

1. Type MC/CI: Rockbestos – Surprenant Cable Corp.'s VITALink MC Circuit Integrity Cable (FHIT System No. 17).

a. PVC jacketing (where shown on drawings).

2. Type FPL/EMT: Rockbestos – Surprenant Cable Corp.'s VITALink FA UL Listed Type FPL installed within ¾" EMT steel conduit (FHIT System No. 22).

E. Where fire alarm cables are installed below 7'0" above finished floor or where installed exposed in areas susceptible to physical damage, cables shall be installed in conduit/raceway as per NFPA 70, section 760.

2.13 SIGNS, LABELS, MARKERS, AND NAMEPLATES

A. Procedure Sign: Card holder with aluminum or stainless-steel frame, plexiglass front and sheet aluminum card backing plate. Minimum size card 8 x 10 inches. For each procedure sign furnish l blank card in holder and 5 spare blank cards suitable for typing future procedures thereon.

B. Wiring Diagram: One line diagram showing interconnection of all major components associated with the system. Encase with aluminum or stainless steel frame, and plexiglass front.

C. Nameplates: Precision engrave letters and numbers with uniform margins, character size minimum 3/16 inch high.

1. Phenolic: Two color laminated engraver's stock, 1/16 inch minimum thickness, machine engraved to expose inner core color (white).
2. Aluminum: Standard aluminum alloy plate stock, minimum .032 inches thick, engraved areas enamel filled or background enameled with natural aluminum engraved characters.
3. Materials for Outdoor Applications: As recommended by nameplate manufacturer to suit environmental conditions.

D. Fire Alarm Signs: 9 x 12 inches, metal, with the words "FIRE ALARM" imprinted thereon in white letters upon a red background. Include a white arrow pointing down, left or right showing the route to, or actual location of the fire alarm stations. Frame the outside edges of the signs in red and white diagonal stripes.

1. Sign Mounting Styles:

a. Single face for mounting flat against the wall.
b. Double faced for mounting extended from wall.

E. Manual Fire Alarm Box Signs: Precision engrave letters with uniform margins, character size minimum 1/8 inch high, stating "LOCAL ALARM ONLY - NOT CONNECTED TO FIRE DEPARTMENT-CALL FIRE DEPARTMENT BY TELEPHONE".

1. Phenolic: Two color (red surface, white core) laminated engraver's stock, 1/16 inch minimum thickness, machine engraved to expose inner core color.

F. Markers:

1. Premarked self-adhesive; W.H. Brady Co.'s B292, B708, Ideal Industries' Mylar/Cloth wire markers, or Markwick Corp.'s permanent wire markers, Plastic Extruded Parts Inc.'s Flexible Sleeve or ID Band Markers, or Thomas and Betts Co.'s E-Z Code WSL self-laminating.
2. Other Styles: To suit application by W.H. Brady Co., Ideal Industries, Marwick Corp., Plastic Extruded Parts, Inc., or Thomas and Betts Co.

2.14 SYSTEM KEYING

A. All system locks, key switches, etc., shall operate with the same key.

2.15 ACCESSORIES

A. Include accessories required to perform the functions summarized in SYSTEM DESCRIPTION and indicated on the drawings.

2.16 FIRE EXTINGUISHER

A. CO2 type fire extinguisher, minimum 20 pound unit by Amerex Corp., Ansul Inc., Fire-End and Croker Corp., or Walter Kidde Portable Equipment, Inc.

PART 3 - EXECUTION

3.1 VERIFICATION OF CONDITIONS

A. Testing Existing Sub-Systems:

1. Test shall be witnessed by the Company Field Advisor and the Director's Representative.
2. Conduct tests that are disruptive to facility personnel after normal working hours as directed.
3. Prepare a written report for the Director's Representative indicating the repairs required, if any, to make the existing sub-systems function properly.
4. Repairs to the existing sub-systems are not included in the Work unless requested by Order on Contract.

3.2 INSTALLATION

A. Install system in accordance with the Company's printed instructions unless otherwise indicated.

B. Do not install smoke detecting devices until the Work (including cleaning) of all trades in the area has been completed. Protect installed smoke detecting devices from airborne dust and debris.

C. Mount smoke detecting devices, and seal air holes in the back of the devices (including interior of raceways and holes associated with installation of boxes and raceways) so that air flow from inside of housing or from the periphery of the housing will not prevent entry of smoke during a fire or test condition. Seal air holes with gaskets, expanding silicone foam, or other sealants as approved.

D. Wiring for Elevator Recall for Fire Fighter's Service and Other Elevator Emergency Functions:

1. Provide wiring to and including a terminal strip cabinet in elevator machine rooms.
2. Contractor responsible for elevator installation will provide elevator control equipment for elevator operation and final electrical connections between terminal strip cabinet and the elevator controllers.

E. Wiring For Survivability:

1. Signals from manual fire alarm boxes and other fire alarm initiating devices within a building transmitted over the same signaling line circuit shall not interfere with the manual fire alarm box signals when both types of initiating devices are operated at the same time.
2. Failure of equipment or a fault on one or more installation wiring conductors of one notification appliance circuit shall not result in functional loss of any other notification appliance circuit.
3. Connect MFACP and other system components requiring a primary power supply to dedicated branch circuits.

    a. Do not connect MFACP to a 2 pole device that can trip both poles at once, such as a 2 pole circuit breaker with handle tie (omit the tie).

4. Splices in wiring in vertical risers is prohibited.
5. Avoid splices in horizontal runs. When splices are necessary, use junction boxes. Exception: For 2-hour fire rated cable assembly, use UL listed methods to maintain 2-hour rating.

    a. Make splices with mechanical or hydraulic type pressure connectors. The use of wire nuts is prohibited.
    b. Paint cover of junction boxes fire department red.

6. Protect notification appliance circuits and other circuits necessary for the operation of the notification appliance circuits from the point at which they exit the fire alarm panel until the point that they enter the notification zone that they serve using one or more of the following methods:

    a. A 2-hour rated cable assembly.

7. Wiring Class A, Style 6, 7, D, E, or Z Signaling Line Circuits, Initiating Device Circuits and Notification Appliance Circuits: Do not install both legs of Class A, Style 6, 7, D, E, or Z circuits in same cable assembly, enclosure, or raceway back to MFACP.

a. Run return legs along another route to obtain maximum benefit of these alternate path circuits.

F. Identification, Labeling, Marking:

1. Procedure Sign: Install adjacent to MFACP and remote annunciator.
2. Nameplates:

a. Install on each manual fire alarm box a nameplate stating: Floor number, and location (1st Fl, east, etc.).

1) Install on each system component requiring a primary power supply a label stating the location of its circuit disconnecting means.

b. Install nameplate on each remote alarm indicator stating the location of its smoke detecting device and the area protected by the smoke detecting device and its function (IN DUCT SMOKE DETECTOR ALARM FOR _____).

3. Power-Limited Circuits: Mark circuits at terminations, indicating that circuit is a power-limited fire protective signaling circuit.
4. Identification of Circuits: Identify wires and cables by system and function in interconnection cabinets, and FACP's to which they connect with premarked, self-adhesive, wraparound type markers. Designations shall correspond with point to point wiring diagrams.
5. Battery Data: Insert a copy of the battery warranty in each battery compartment and mark on batteries the date placed in service.
6. Alarm Verification Warning Marking: Affix to the inside of each FACP, a list indicating:

a. Affected circuits.
b. Delay (seconds).
c. The smoke detector model numbers used.

G. Protective Devices: Install where indicated on the drawings.

1. Where devices are installed on wood or masonry surfaces, attach protective devices directly to the surface with vandal resistant fasteners.
2. Where devices are installed on suspended ceiling provide additional supports in the ceiling, such as channel support system, angle iron or additional runner bars. Fasten the additional supports rigidly to the ceiling runner bar system. Attach frame or brackets of protective device to the supports with vandal resistant fasteners. Install metal spacers between the protective device frame and the supports so that the ceiling tiles will not be a part of the support system.
3. Use finishing collar between surface and protective device where protective device cannot be mounted tight against surface due to job conditions.

H. Locate fire extinguisher proximate to MFACP.

3.3 FIELD QUALITY CONTROL

A. Preliminary System Test:

1. Preparation: Have the Company Field Advisor adjust the completed system and then operate it long enough to assure that it is performing properly.
2. Run a preliminary test for the purpose of:

a. Determining whether the system is in a suitable condition to conduct an acceptance test.
b. Checking and adjusting equipment.
c. Training facility personnel.

B. System Acceptance Test:

1. Preparation: Notify the Director's Representative at least 3 working days prior to the test so arrangements can be made to have a Facility Representative witness the test.
2. Supply all equipment necessary for system adjustment and testing.
3. Make the following tests:

a. Test the system in accordance with NFPA 72, Chapter 7.

1) Follow test methods stated in Table 7-2.2.
2) Record results on NFPA 72 Figure 1-6.2.1 Record of Completion.

b. Test system operation step by step as summarized in SYSTEM DESCRIPTION.

4. Submit written report of test results signed by Company Field Advisor and the Director's Representative. Also complete an NFPA Record of Completion.

a. Mount a copy of the written report of test results, and the NFPA 72 Record of Completion in plexiglass enclosed frame assemblies adjacent to the MFACP (one framed assembly for each report).

C. Conduct tests that are disruptive to facility personnel after normal working hours as directed.

3.4 INSULATED CONDUCTOR SCHEDULE - TYPES AND USE

A. Signaling Line Circuits, Initiating Device Circuits and Notification Appliance Circuits:

1. Power-Limited Circuits: For interior wiring (in raceways) use power-limited fire alarm circuit multiconductor cable types specified in PART 2 except where a 2-hour fire rated cable assembly is required.

a. Number of conductors and conductor size as recommended by the Company producing the system, except that conductor size shall not be less than No. 18 AWG for signaling line circuits and not less than No. 16 AWG for initiating device circuits and notification appliance circuits.
b. Using Nonpower-Limited Wiring On Power-Limited Circuits: Wiring size and types specified for nonpower-limited circuits may be used for power-limited circuits

if power-limited circuits are reclassified and the power-limited markings are eliminated. Refer to NFPA 70 Article 760-52(a) Exception No. 3.

2. Nonpower-Limited Circuits: For interior wiring (in raceways) use nonpower-limited fire alarm circuit single conductors or multiconductor cable types specified in PART 2 except where a 2-hour fire rated cable assembly is required.

    a. Number of conductors and conductor size as recommended by the Company producing the system, except that conductor size shall not be less than No. 18 AWG for signaling line circuits, not less than No. 16 AWG for initiating device circuits, and not less than No. 14 AWG for notification appliance circuits.

3. Where wiring is specifically indicated on drawings not to be run in raceway, use metal-clad cable type MC (concealed, unless otherwise indicated), except where a 2-hour fire rated cable assembly is required.

B. Signaling Line Circuits Between MFACP and Networked ICU's: Use Type LAN-O or type LAN-I optical fiber cables (Section 271525) in raceways for network communication bus circuits.

C. Other Circuits for Which 2-Hour Fire Rated Cable Assembly is Specified or Indicated:

1. Use CI cable in rigid steel conduit, MI cable, MC/CI cable or FPL/EMT.

    a. Where MI or MC/CI cable is used and run in areas subjecting cable to corrosion, use PVC or HDPR jacketed cable (nonmetallic jacketed cable is not suitable for use in ducts, plenums or other spaces used for environmental air).

D. Control Circuits: Associated with the Fire Alarm System: Use Class 1, 2, and 3 wiring specified in Section 260519.

E. Primary Supply Circuits and Secondary Supply Wiring:

1. Use electric light and power wiring specified in Section 260519.

END OF SECTION 283101

NEW YORK STATE | Office of General Services

Design and Construction

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Albany, New York 12242
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STATEMENT OF SPECIAL INSPECTIONS

Project No.: 47477

Instructions: BCNYS Section 1704.2.3 requires the project Design Professional to complete the Statement of Special Inspections *as a condition for issuance of the Construction Permit.* Complete each section of this form as applicable, and submit it to the Code Compliance Manager with the Summary of Special Inspections (BDC 406).

PROJECT INFORMATION:	**DESIGNER INFORMATION:**		**CONSTRUCTION INFORMATION**:	
Project Description: *(Project Title, Facility Name and Address)* RENOVATE ARMORY STATE ARMORY 2 QUINCY PLACE YONKERS, NY	Architect/Engineer/Consultant: Bell & Spina Architects-Engineers, PC		Engineer- In-Charge:	Region:
	Name of Person Completing Form: *(if different from above)* Jack Healy - RBCD; Mike Olszewski - M&P		Name of Person Completing Form: *(if different from above)*	
	Phone: 315-488-0377	Date: 11-24-2025	Phone:	Date:
Business Unit: BU 4	Comments: Completed by Ryan Biggs Clark Davis Engineering, DPC; M&P Engineering and Land Surveying, PLLC		Comments:	
Team Leader: Kevin Renaghan				

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
	A. Steel Construction				1705.2			
☒	1. Structural steel.	☐	☒	AISC 360 Chapter N.5	1705.2, 1705.2.1	051200.0		
☒	2. Cold-formed steel deck.		☒	SDI QA/QC 2011	1705.2, 1705.2.2	053100.0		
☐	3. Installation of open-web steel joist and joist girders.		☐	SJI specification (Section 2207.1)	1705.2, 1705.2.3, 1705.2.4			
	B. Concrete Construction				1705.3			
☒	1. Inspection of reinforcing steel, including prestressing tendons, and placement.		☒	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	1705.3, 1908.4	032000.0		

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
	B. Concrete Construction				1705.3			
☒	2a. Reinforcing bar welding - Weldability of reinforcing bars other than ASTM A706.		☒	AWS D1.4; ACI 318: 26.6.4	1705.3, 1705.3.1	032000.0		
☒	2b. Reinforcing bar welding - Single-pass fillet welds, maximum 5/16 inches.		☒	AWS D1.4; ACI 318: 26.6.4	1705.3, 1705.3.1	032000.0		
☒	2c. Reinforcing bar welding - All other welds.	☒		AWS D1.4; ACI 318: 26.6.4	1705.3, 1705.3.1	032000.0		
☒	3. Cast in concrete anchorage.		☒	ACI 318: 17.8.2	1705.3	032000.0		
☒	4a. Post installed concrete members - Adhesive anchors installed horizontally or upwardly inclined to resist sustained tension loads.	☒		ACI 318: 17.8.2.4	1705.3	033000.0		
☒	4b. Post installed concrete members - Mechanical anchors and adhesive anchors not defined in 4.a.		☒	ACI 318: 17.8.2		033000.0		
☒	5. Verify use of required design mix.		☒	ACI 318: Ch. 19, 26.4.3, 26.4.4	1705.3, 1904.1, 1904.2, 1908.2, 1908.3	033000.0		
☒	6. Sampling fresh concrete: slump, air content, temperature, strength test specimens.	☒		ASTM C 172, ASTM C31; ACI 318: 26.4, 26.12	1705.3, 1908.10	033000.0		
☒	7. Inspect concrete and shotcrete placement for proper application techniques.	☒		ACI 318: 26.5	1705.3, 1908.6, 1908.7, 1908.8	033000.0		
☒	8. Inspection for maintenance of specified curing temperature and techniques.		☒	ACI 318: 26.5.3-26.5.5	1705.3, 1908.9	033000.0		
☐	9. Inspection of prestressed concrete.	☐		ACI 318: 26.10	1705.3			

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
☐	10. Erection of precast concrete members.		☐	ACI 318: Ch. 26.8	1705.3			
☐	11. Verification of in-situ concrete strength prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and slabs.		☐	ACI 318: 26.11.2	1705.3			
☒	12. Inspect formwork for shape, location and dimensions of the concrete member being formed.		☒	ACI 318: 26.11.1.2(b)		031000.0		
☒	13. Material Tests – In absence of sufficient data or documentation for materials.		☒	ACI 318 Ch. 19 and 20		033000.0		
	C. Masonry Construction				1705.4			
☒	1. Masonry construction.	☐	☒	ACI 530/ ASCE 5/TMS 402 and ACI 530.1/ ASCE 6/TMS 602 Ch. 3	1705.4	042000.0		
☐	2. Empirically designed masonry, glass unit masonry and masonry veneer in Risk Category IV.		☐	TMS 402/ ACI530/ ASCE 5 Level B Ch. 3	1705.4.1, 2109, 2110, or Ch. 14			
☐	3. Vertical masonry foundation elements.	☐	☐		1705.4, 1705.4.2			
	D. Wood Construction				1705.5			
☐	1. Wood construction- Fabrication of wood structural elements and assemblies.		☐		1705.5, 1704.2.5			
☐	2. High-load Diaphragms.		☐		1705.5, 1705.5.1, 2306.2,1704.2			

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
	D. Wood Construction				1705.5			
☐	3. Metal-plate-connected wood trusses spanning 60 feet or greater (temp. and perm. installation).		☐		1705.5.2			
	E. Soils				1705.6			
☒	1. Subgrade inspection.		☒		1705.6	310000.0		
☒	2. Classification and testing of compacted fill materials.		☒		1705.6	310000.0		
☒	3. Evaluation of in-place density and lift thickness.	☒			1705.6	310000.0		
☐	**F. Driven Deep Foundations** Installation and load tests (if applicable).	☐			1705.7			
☐	**G. Cast-In-Place Deep Foundations** Installation, end bearing strata, and load tests (if applicable).	☐			1705.8			
☐	**H. Helical Pile Foundation** Installation and load tests (is applicable).	☐			1705.9			
☒	**I. Fabricated Items**		☒		1705.10, 1704.2.5	055213	Pipe and tube railings	
☐	**J. Wind Resistance** Applicable in Exposure Category B with a basic wind speed of 120 mph and Exposure Categories C or D with basic wind speed of 110 mph or greater.				1705.11			
☐	1a. Structural wood - Field gluing operation of elements of main wind force-resisting system (MWRS).	☐			1705.11.1			

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
☐	**J. Wind Resistance** Applicable in Exposure Category B with a basic wind speed of 120 mph and Exposure Categories C or D with basic wind speed of 110 mph or greater.				1705.11			
☐	1a. Field Gluing	☐			1705.11.1			
☐	1b. Structural wood - Nailing, bolting, anchoring, and fastening elements of the MWRS.		☐		1705.11.1			
☐	2a. Cold formed steel - Welding operations of elements of MWRS.		☐		1705.11.2			
☐	2b. Cold formed steel - Screw attachments, bolting, anchoring, and fastening of elements of MWRS.		☐		1705.11.2			
☐	3. Wind-resisting components – Roof covering, roof deck, and roof framing connections. Exterior wall covering and wall connections to roof and floor diaphragms and framing.		☐		1705.11, 1705.11.3			
☐	**K. Special Inspections for Seismic Resistance** Applicable to specific structures, systems, and components.				1705.12			
☐	1. Structural steel - Seismic force-resisting systems & elements.	☐		AISC 341 Ch. J	1705.12.1.1 or 1705.12.1.2			
☐	2a. Structural wood - Field gluing operation of elements of seismic force-resisting system (SFRS).	☐			1705.12.2			
☐	2b. Structural wood - Nailing, bolting, anchoring, and fastening of elements of SFRS.		☐		1705.12.2			

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
	K. Special Inspections for Seismic Resistance Applicable to specific structures, systems, and components.				1705.12			
☐	3. Cold-formed steel framing – welding and fasteners.		☐		1705.12.3			
☐	4. Designated seismic systems – verify that label, anchorage, and mounting conforms to the certificate of compliance.		☐	ASCE 7 Section 13.2.2	1705.12.4			
☐	5. Architectural components.		☐		1705.12.5			
☐	6. Plumbing, Mechanical and electrical components.		☐		1705.12.6			
☐	7. Storage racks and access floors.		☐		1705.12.7,			
☐	8. Seismic isolation systems.		☐		1705.12.8			
☐	9. Cold-formed steel special bolted moment frames.		☐		1705.12.9			
☐	**L. Structural Testing for Seismic Resistance** Applicable to specific structures, systems, and components.				1705.13			
☐	1. Structural steel.	☐	☐	AISC 341 Ch. J	1705.13.1			
☐	2. Nonstructural components.		☐	ASCE 7 Section 13.2.1	1705.13.2			
☐	3. Designated seismic systems.		☐	ASCE 7 Section 13.2.2	1705.13.3			

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
	L. Structural Testing for Seismic Resistance Applicable to specific structures, systems, and components.				1705.13			
☐	4. Seismic isolation systems.		☐	ASCE 7 Section 17.8	1705.13.4			
	M. Sprayed Fire-Resistant Materials [BF]				1705.14			
☐	1. Physical and visual tests.		☐		1705.14.1			
☐	2. Structural member surface conditions.		☐		1705.14.2			
☐	3. Application.		☐		1705.14.3			
☐	4. Thickness.		☐	ASTM E 605	1705.14.4			
☐	5. Density.		☐	ASTM E 605	1705.14.5			
☐	6. Bond strength.		☐	ASTM E 736	1705.14.6			
☐	**N. Mastic and Intumescent Fire-Resistant Coatings [BF]**		☐	AWCI 12-B	1705.15			
☐	**O. Exterior Insulation and Finish Systems (EIFS)**		☐	ASTM E2570	1705.16			
☐	**P. Fire-Resistant Penetrations and Joints [BF]** High rise building or buildings assigned to risk category III or IV		☐	ASTM E2174 ASTM E2393	1705.17			
☐	**Q. Testing for Smoking Control [F]**		☐		1705.18			

NEW YORK STATE
Office of General Services
Office of Business Diversity

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CONTRACTOR'S MWBE UTILIZATION PLAN

☐ Revised Plan

Contract No.: _____

REMINDER: Utilize the New York State Contract System located at https://ny.newnycontracts.com/Default.asp?TN=ny&XID=8353 to report MWBE payments on a monthly basis. Making false representations or including information evidencing a lack of good faith as part of, or in conjunction with, the submission of a Utilization Plan is prohibited by law and may result in penalties including, but not limited to, termination of a contract for cause, loss of eligibility to submit future bids, and/or withholding of payments. Firms that do not perform commercially useful functions may not be counted toward MWBE utilization.

Contractor's Name, Address and Federal ID No.:	Contract Description/Location:	Date Proposal Approved:	Date Printed:	Bid Date:	MWBE GOALS	
					MBE%	WBE%
Federal ID No.:	Work/Job Order:	OGS Project Number:	Work Order Value:	Contract Amount:		

Certified MBE/WBE Name, Address and Phone No.	MBE	WBE	Tiered Sub	Description of Subcontracting/Supplies	Anticipated performance/purchase date(s)	Dollar Value of Subcontract/Supplies	FOR OGS USE ONLY	SEE BDC 328.1
Federal ID No.:	☐	☐	☐					☐
Federal ID No.:	☐	☐	☐					☐
Federal ID No.:	☐	☐	☐					☐
Federal ID No.:	☐	☐	☐					☐

Pursuant to Executive Law Article 15-A, my firm will engage in a good faith effort to achieve the MWBE goals on this contract.

Contractor's Signature:

Enter Name:

Title:

E-Mail Address: Date:

Contractor's Comments:

FOR OGS USE ONLY

☐ Accepted ☐ Accepted as Noted ☐ Notice of Deficiency Issued

MBE % _____ MBE $ _____ WBE % _____ WBE $ _____

OGS Authorized Signature:	Enter Name:	Date:

NEW YORK STATE | Office of General Services
Office of Business Diversity

Design and Construction

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Albany, New York 12242
Phone: (518) 486-9284 FAX: (518) 486-9285

CONTRACTOR'S LIST OF SUBCONTRACTORS/SUPPLIERS

Contract No.

Contractor's Name, Address and Federal ID No.:	Project Description/Location:		Date Submitted:	Bid Date:	MWBE Goals		SDVOB Goal
					MBE	WBE	
Federal ID No.	☐ Construction Contracts Exceeding $100,000 ☐ Commodity or Service Contracts Exceeding $25,000		Submittal No.:	Contract Amount:			
Date Proposal Approved:	Date Printed:	OGS Project Number:	Work/Job Order:		Work Order Value:		

Subcontractor/Supplier Name, Address, Phone No., Federal ID No. (FEIN) and DOL No. *(Do not list information previously submitted.)*	Sub/Supplier *(Check One)*			MBE	WBE	SDVOB	General Description of Work	Subcontractor/ Supplier Dollar Value	**OGS Use Only**
	Sub	Tiered Sub	Supplier						
FEIN.: DOL No: - -CR	☐	☐	☐	☐	☐	☐			
FEIN.: DOL No: - -CR	☐	☐	☐	☐	☐	☐			
FEIN.: DOL No: - -CR	☐	☐	☐	☐	☐	☐			
FEIN.: DOL No: - -CR	☐	☐	☐	☐	☐	☐			

Pursuant to Executive Law Article 15-A and Article 3 of the Veterans' Services Law, my firm proposes to use the certified firms listed above.

Contractor's Signature

Title

Date

OGS Use Only

Proposed Goal Attainments:

MBE % _____ WBE % _____ SDVOB % _____

☐ Accepted ☐ Accepted as Noted ☐ Not Accepted

Reason: _____

OGS Authorized Signature _____ Date _____

OGS 47477 RENOVATE STATE ARMORY NATIONAL GUARD

GEOTECHNICAL ENGINERING SERVICES – NEW ADDITION

RGE PROJECT NUMBER: 25.0015

GEOTECHNICAL ENGINEERING SERVICES REPORT

RENAISSANCE GEOTECHNICAL ENGINEERING™



PREPARED FOR:

BELL & SPINA
215 WYOMING STREET
SYRACUSE, NY 13204

PREPARED BY:

RENAISSANCE GEOTECHNICAL ENGINEERING, PLLC
P.O. BOX 2503
GLENVILLE, NY 12302
al@renaissancegeo.com

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RENAISSANCE GEOTECHNICAL ENGINEERING™

June 23, 2025

BELL AND SPINA
215 Wyoming Street
Syracuse, New York 13204

Attn.: Mr. James L. Paolini, AIA Email: jpaolini@bellandspina.com

RE: Geotechnical Engineering Services Report
Renovate State Armory National Guard – New Addition
2 Quincy Place, Yonkers, Rockland County, New York
OGS Project No.: 47477
RGE PROJECT Number: 25.0015

Dear Mr. Paolini:

On May 23, 2025, RENAISSANCE GEOTECHNICAL ENGINEERING, PLLC (RGE) retained the services of Core Down Drilling Company for the completion of a single subsurface exploration boring within the existing facility of the State Armory National Guard in Yonkers, New York. The purpose of this investigation was to oversee the drilling process, visually classify the recovered subgrade soils, and provide shallow footing foundation recommendations to support a lightly loaded addition.

The test boring was advanced to a depth of approximately 22 feet below current grade. A map depicting the approximate location of the boring is included with this letter as Attachment 1.

A test boring log data including the completed laboratory tests have been provided as part of Attachment 2. Expanded laboratory test results and curves are included in Attachment 3.

Site Geology

The Surficial Geologic Map of New York, Lower-Hudson, 1989 Sheet identifies the project area as part of "t – Till" described as Silty SAND with Gravel.

According to the United States Geological Survey (USGS) and the Geologic Map of New York, Lower Hudson, the project site is situated in a geologic area best described as being part of the Fordham Gneiss.

Seismic Considerations

We recommend that foundations at this site be designed assuming a Seismic Site Class "D" as recommended in Section 1613.3.2 of the New York State Building Code and Chapter 20 of ASCE 7. Seismic output parameters summarized in the table below from the ASCE/SEI 7-16 Seismic Standard Tool are also found in Attachment 4.

Seismic Site Class and Spectral Accelerations

Seismic Site Class		D
Estimated Site Coordinates	Latitude	40.938352
	Longitude	-73.89689
Adjusted Peak Ground Acceleration - PGA_M		0.264g
S_{MS} – Short Period, Site Class Modified Spectral Acceleration		0.464g
S_{M1} – 1 Second Period, Site Class Modified Spectral Acceleration		0.147g
S_{DS} – Short Period, Five Percent Damping, Spectral Acceleration		0.31g
S_{D1} – 1 Second Period, Five Percent Damping, Spectral Acceleration		0.098g

S_s – Short Period Spectral Acceleration	0.297g
S_1 – 1 Second Period Spectral Acceleration	0.061g
Assumed Risk Category (Final determination shall be by the structural engineer)	III

Groundwater Conditions

The presence of water was not observed at the time of drilling. Groundwater level fluctuations and/or perched water conditions may occur due to seasonal variations in the amount of rainfall and other factors such as drainage characteristics. To obtain more accurate groundwater level information, long-term observations in a monitoring well or piezometer that is sealed from the influence of surface water would be needed.

Shallow Foundations

To limit total and differential elastic settlements due to static loading to less than an inch, a reinforced continuous footing, with isolated column footings should be designed using a maximum allowable net bearing pressure of 2,000 pounds per square foot. This bearing pressure is the pressure that can be applied to the soils at the base of the footings in excess of the minimum surrounding overburden pressures. To provide frost heave protection and ensure adequate confinement of the bearing materials, footings should be located at least 3.5 feet below final outside grade. Interior column footings may bear at least 3 feet below the finished floor elevation and be at least 30 inches in width.

Formed continuous footings should have a minimum width of 24 inches. Prior to placing concrete, all foundation bearing grades should be dry, stable, and free of standing water, mud, or frost. Bearing grades should be compacted prior to constructing the foundations in order to densify the subgrade materials that have been loosened during the excavations. The foundation excavations should be backfilled with onsite soils, or of select granular fill meeting the gradation requirements shown below:

Sieve Size Designation	Percent Passing by Weight
4-inch	100
No. 40	0 – 70
No. 200	0 – 15

Caution should be taken to prevent wetting, drying, or disturbance of the bearing materials. This can be accomplished by placing concrete as soon as the excavation is approved by the Geotechnical Engineer's representative. Surface run-off water should drain away from the excavated areas. If the subgrade materials should become wet or dry and/or loose or disturbed, they should be removed before placing concrete. Any soft or loose areas observed should also be removed before placing concrete.

The passive resistance of the soils against the sides of the footings should be neglected within the top 2 feet. For portions of the footings that extend below the 2-foot depth and bear against undisturbed soils, an ultimate passive earth pressure of 400 psf per foot of depth can be used for stability. Lateral resistance can be calculated using an allowable coefficient of sliding friction 0.4 times the sustained dead load on the footing up to a maximum 2,000 pounds per square feet.

Slab-On-Grade Floor Slab

The floor slab should be provided with a subbase course of Select Granular Material at least 6 inches thick. This subbase course should consist of crusher-run stone that conforms to the gradation requirements shown below:

Sieve Size Designation	Percent Passing by Weight
2-inch	100
¼"	25 – 60
No. 40	5 – 40
No. 200	0 – 10

This subbase material should be compacted to 95 percent of the material maximum dry density per ASTM D-1557. We recommend placing a waterproof membrane (15-mil Polyethylene) on top of the compacted subbase below the floor slab for a vapor barrier. A slab-on-grade supported on at least 6 inches of the above specified subbase material should be designed using a modulus of subgrade reaction, k_1, of 150 pci based on a 1-foot by 1-foot plate load test.

Water curing the slab will help the curing process and should help reduce shrinkage cracks and slab curling. Alternative curing provisions of ACI 302 and ACI 308R can also be adopted as directed by the Structural Engineer. Before the floor covering is placed, we recommend slab moisture emission tests be conducted to confirm that moisture discharge levels are within the floor covering manufacture's recommendation. These tests should be run at typical temperature and humidity conditions representative of what the floor covering will be susceptible to under normal conditions.

Drainage Considerations

The ground surface should be sloped at least 2% away from the building on all sides to allow for positive drainage away from the building. Water should not be allowed to pond near the structure during or after construction. Foundation and floor drain systems are not required; however, if installed, they should be at least 4 inches thick and constructed of crushed stone or gravel with no more than 10 percent of the material passing the #4 sieve. Additional recommendations for the design of foundation and floor drains can be found in Section 1805 of the 2020 New York State Building Code.

Construction Dewatering

The presence of groundwater was not observed. However, if encountered during the excavation process for the foundations, the need for dewatering shall be the responsibility of the contractor including restoring the excavations to a dry condition and preparing the foundation subgrades that are free of mud, water, and disturbed soils.

Construction Monitoring

This report provides geotechnical recommendations based on the subsurface conditions encountered at a single test boring. It is not practical or economical to perform enough subsurface investigation borings and test pits to identify all conditions at the site. Subsurface conditions may vary with distance away from the boring completed for this report. Conditions that may affect the recommendations contained in this letter may exist and may not become known until construction. If variations appear during construction, it may be necessary to revise the recommendations contained in this letter. In general accordance with the 2020 State of New York Building Code, monitoring of subsurface conditions during construction should be performed by a geotechnical engineer registered in the State of New York or his/her representative to verify that conditions are consistent with the findings included in this letter. Foundation construction recommended in this letter must be monitored in a full-time basis by a registered geotechnical engineer.

General

The findings and recommendations contained in this letter have been made with generally accepted professional geotechnical practices in the local area. No other warranties are implied or expressed. The scope of services and recommendations contained in this letter do not include any environmental assessment or identification of contaminated or hazardous materials. Any statements in this report or in the boring log concerning suspicious odors, colors, irregular textures or abnormal conditions are for informational purposes only and have not been verified by the geotechnical engineer, drilling or testing companies.

Mr. Paolini, we appreciate the opportunity to work with you on this project, and at your request, we are prepared to assist you with the proper construction monitoring and testing services. If you have any questions regarding the information contained in this letter report or if we can be of further assistance, please call us at (518) 902-9222 or email at al@renaissancegeo.com

Respectfully,
RENAISSANCE GEOTECHNICAL ENGINEERING, PLLC



Alseny Diop, P.E.
Principal Geotechnical Engineer

Attachment 1 – Vicinity Map & Boring Location Diagram

Attachment 2 – Test Boring Log, General Notes, Key to Boring Log Symbols

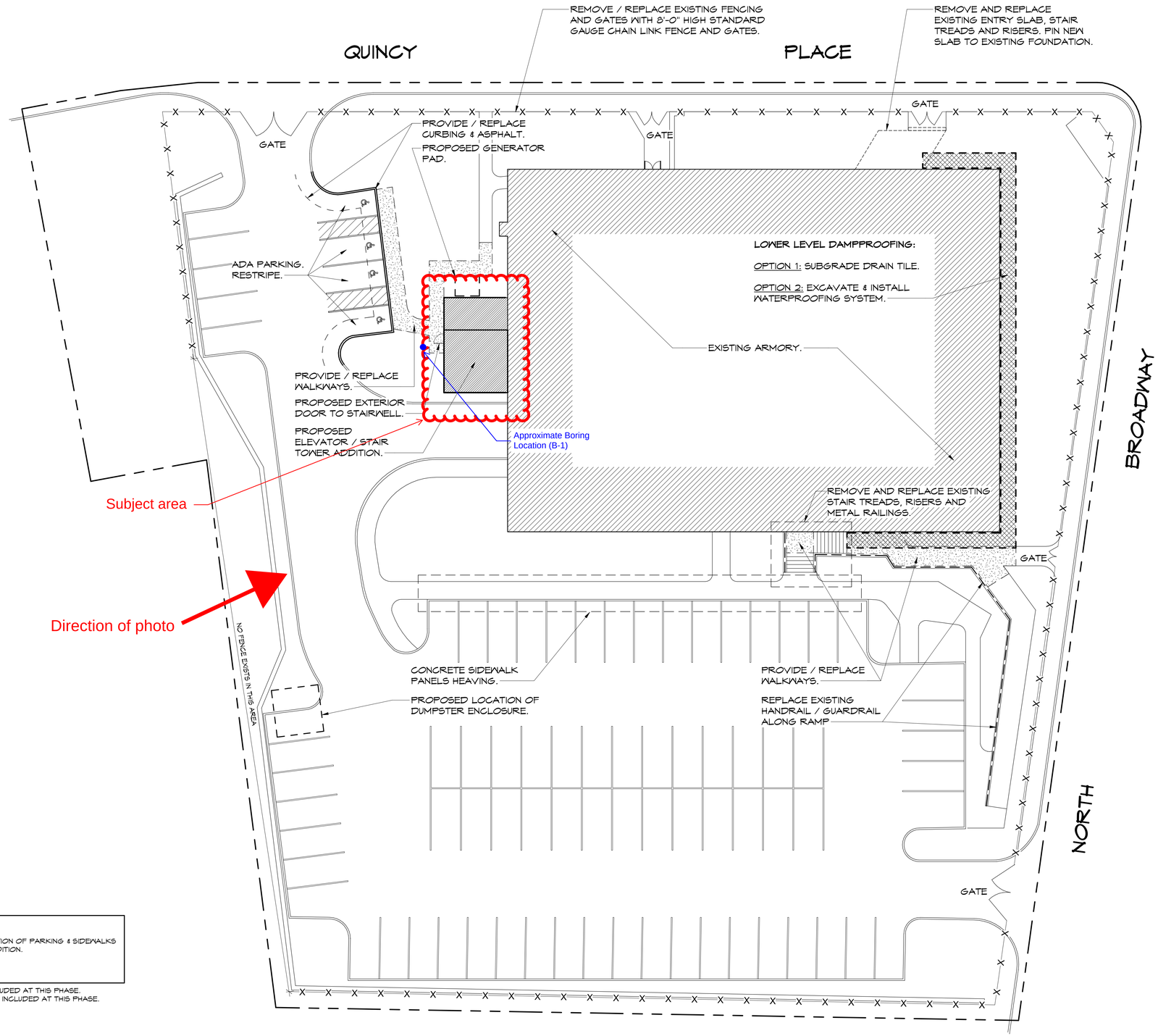
Attachment 3 – Graph of Laboratory Test Results

Attachment 4 – Seismic Output Data

Attachment 1

Vicinity Map & Boring Location Diagram


Approximate Boring
Location (B-1)



SCOPE OF SITE WORK:

1. RESTORATION AND RECONFIGURATION OF PARKING & SIDEWALKS FOR STAIR/ELEVATOR TOWER ADDITION.
2. FENCING & DUMPSTER.
3. SIDEWALKS AND RAILINGS.
4. WATERPROOFING.
5. LANDSCAPING, STORAGE NOT INCLUDED AT THIS PHASE.
6. PARKING LOT IMPROVEMENTS NOT INCLUDED AT THIS PHASE.

1 SITE PLAN
SCALE : 1/16" = 1'-0"

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT

bell & spina ARCHITECTS

WARNING:
THE ALTERATION OF THIS MATERIAL ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR

CONTRACT:
CONSTRUCTION

TITLE:
RENOVATE ARMORY

LOCATION:
STATE ARMORY
2 QUINCY PLACE
YONKERS, NY

CLIENT:
DIVISION OF MILITARY AND NAVAL AFFAIRS

MARK	DATE	DESCRIPTION
	12/04/2024	30% SUBMISSION

MARK	DATE	DESCRIPTION
PROJECT NUMBER:	47477-C	
DESIGNED BY:	JP	
DRAWN BY:	BT	
FIELD CHECK:		
APPROVED:		

SHEET TITLE:
SITE PLAN

DRAWING NUMBER:
G-102

SHEET 3 OF 109

Attachment 2

Boring Log
General Notes
Key to Boring Log Symbols

Renaissance Geotechnical Engineering, PLLC
3049 Hamburg Street
Schenectady, NY 12303
Telephone: 518-902-9222
Fax: 518-630-6757

BORING NUMBER B-1

CLIENT BELL & SPINA
PROJECT NAME NYSOGS 47477 Yonkers Armory Renovation
PROJECT NUMBER 25.0015
PROJECT LOCATION 2 Quincy Place, Yonkers, New York
DATE STARTED 5/23/25 **COMPLETED** 5/23/25
GROUND ELEVATION **HOLE SIZE** 6 inches
DRILLING CONTRACTOR RENAISSANCE GEOTECHNICAL
GROUND WATER LEVELS:
DRILLING METHOD CME-55 4-Inch ID HW40
AT TIME OF DRILLING --- None
LOGGED BY A.Diop **CHECKED BY** A.Diop
AT END OF DRILLING --- None
NOTES
AFTER DRILLING --- None

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	Test Results and Remarks	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0							0.3 **Approximately 4 inches of TOPSOIL**
	SS 1	63	1-1-3-3 (4)		SM		(SM) **(FILL) Silty SAND, trace gravel** loose, brownish-gray, moist
	SS 2	75	5-10-11-8 (21)	MC = 9% LL = NP PL = NP Fines = 36% SAND = 56%, gravel = 7%			- grades to medium dense from 2.5 feet
5	SS 3	96	5-6-5-4 (11)				
	SS 4	65	5-8-5-6 (13)				6.5 (CL-ML) **Sandy, Silty CLAY, trace gravel**
10	SS 5	58	3-6-5-15 (11)	MC = 18% LL = 22 PL = 16 Fines = 70% Sand = 29%, gravel = 1%	CL-ML		10.0
	SS 6	67	12-21-23-25 (44)	MC = 8% LL = NP PL = NP Fines = 25% SAND = 52%, Gravel = 23%	SM		(SM) **Silty SAND with Gravel** dense, light brown, dry
15	HS						
	SS 7	90	22-23-21-31 (44)	MC = 7% LL = NP PL = NP Fines = 37% SAND = 47%, Gravel = 16%			- frequent small cobbles of gneiss from 15 feet
20	HS						
	SS 8	100	22-39-50-50/6"				22.0

Bottom of borehole at 22.0 feet.

GENERAL BH / TP / WELL - GINT STD US LAB COLOR.GDT - 6/23/25 17:09 - C:\USERS\ALDIO\ONEDRIVE - RENAISSANCE GEOTECHNICAL ENGINEERING, PLLC\- PROJECTS\- 2025\- OGS PROJECTS\25.0015 - OGS 47477 RENOVATE STATE ARMORY NATIONAL GUARD

RENAISSANCE GEOTECHNICAL ENGINEERING TM

Phone: 518-902-9222
405-215-9367
info@renaissancegeo.com

BORING LOG ACRONYM LIBRARY

- SPT-N: Blow or strike count for the Standard Penetration Test or the Texas Cone Penetrometer Test. In general, the Standard Penetration Test "N" is the numbers of strikes required to advance a standard 2-inch outside diameter split-spoon a distance of 1-foot, or portion thereof, with a 140-pound hammer falling 30 inches.

  In general, the Texas Cone Penetrometer Test (TCP) "N" is the numbers of strikes with penetration depths required to advance a solid steel three-inch diameter cone of standard dimensions with a170-pound weight falling 24-inches. Two 50 strike intervals or two 6-inch penetration intervals is recorded.

- WOH: Weight of Hammer
- WOR: Weight of Drilling Rod
- USCS Symbol: The Unified Soil Classification System Identification Symbol
- ATV: All-Terrain Vehicle Mounted Drill Rig
- EL: Elevation
- Lt: Left
- Rt: Right
- LL, PL, PI: Atterberg Limits (Liquid Limit, Plastic Limit, Plasticity Index)
- -#200: Percent Passing Standard No. 200 Sieve
- NP – Non-Plastic
- MC: Moisture Content
- AS: Auger Sample
- BS: Bucket Sample
- DB: Diamond Drilling Bit (Truck Rotary Drilling using air or water to remove cuttings)
- DCD: Diamond Core Barrel Drilling
- HA: Hand Auger
- HS: Hollow Stem Auger (Truck Rotary Drilling)
- PA: Power Auger (Truck Rotary Drilling)
- NR: No Recovery
- PMT: Pressure Meter
- DMT: Dilatometer
- CPT: Cone Penetration Test
- BHS: Borehole Shear
- FV: Field Vane Shear
- TV: Torvane
- PP: Pocket Penetrometer
- RB: Rock/Roller Bit (Truck Rotary Drilling using air or water to remove cuttings)
- RC: Rock Core using
- RQD: Rock Quality Designation
- SS/SPT: Standard Penetration Test (Split-Spoon)
- ST: Thin-Wall Tube Sample (Shelby Tube): a 3" O.D. tube, unless noted otherwise
- TCP: Texas Cone Penetrometer Test
- DCP: Dynamic Cone Penetrometer
- WS: Wash Sample
- WB: Wash Bore
- AB: After Boring Complete
- DCI: Dry Cave In
- WCI: Wet Cave In
- WD: While Drilling
- WS: While Sampling
- WL: Water Level Depth from Boring Surface Elevation
- CME: Central Mine Equipment
- GP: Geoprobe
- AHS: After Hollow Stem
- BHS: Before Hollow Stem

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GENERAL INFORMATION & KEY TO THE SUBSURFACE EXPLORATION LOGS

The Subsurface Logs attached to this report present the general observations and mechanical data collected by the drillers at the site, supplemented by classification of the material removed from the borings as determined through visual identification by engineers in the field, and by technicians in the laboratory. The materials removed from the borings represent only a small fraction of the soils at the site and may not be representative of subsurface conditions between and/or away from the boring locations or the sampled intervals. The data presented on the Subsurface Logs along with the recovered samples provide a basis for estimating the engineering characteristics of the soils at the site. The evaluation must consider all the recorded details and their relative significance to the project. It is common that evaluation of standard subsurface data indicates the need for additional testing and/or sampling to evaluate the subsurface conditions more accurately. Any evaluation of the data presented on the Subsurface Logs must be performed by qualified professionals. The following information defines some of the procedures and terms used on the Subsurface Logs to describe the conditions encountered. Water levels measured in low permeability soils (clays & unfractured rock) may require long term observations and therefore, the depths shown may not be accurate.

Soil Classification and Descriptions

- Soil Classification: The soil description and classification is based on the Unified Soil Classification System (USCS) unless noted otherwise

- *Consistency/Relative Density*

Cohesionless Materials		Cohesive Materials		
N-blows/ft	Relative Density	N-blows/ft	Consistency	Est. UCS-q_u (psf)
0 – 4	very loose	0 – 2	Very Soft	< 500
5 – 10	loose	2 – 5	Soft	500 – 1,000
11 – 24	medium dense	5 – 10	Medium	1,001 – 2,000
25 – 50	dense	10 – 20	Stiff	2,001 – 4,000
51 – 80	very dense	20 – 30	Very Stiff	4,001 – 8,000
81+	extremely dense	30 – 60	Hard	8,001 – 16,000
		>60	Very Hard	> 16,000

Particle Size

Particle Size	Material Type
Boulders	>12 inches
Cobbles	3 inches to 12 inches
Gravel	coarse: ¾" to 3"
	fine: #4 to ¾"
Sand	coarse: #10 to #4
	medium: #40 to #10
	fine: #200 to #40
Silt/Clay	<#200

- Description Modifier: The following terms may be used as qualifiers for mixed soils

Term Used	Estimated Percent Total	Component	Particle Shape – Applicable to Coarse
Primary	More than 50	Noun – GRAVEL, SAND, SILT or CLAY	*Angular:* sharp edges and relatively plain sides with unpolished surfaces
and or &	35 – 50	Gravelly, sandy, silty, clayey, with	*Subangular:* similar to angular but with rounded edges
Some	20 – 35	**MOISTURE CONTENT DESCRIPTION**	*Subrounded:* nearly plane sides but with well rounded corners and edges
		Dry: absent of moisture, dusty, dry to touch	
little	10 – 20	Moist: damp but no visible water	Rounded: smoothly curved sides and no edges
trace	less than 10	Wet: visible free water	

Varved: Horizontal uniform layers or seams of soil(s)
Seam: Soil deposit less than 6" thick
Laminated - Irregular, horizontal and angled seams and partings of soil

Layer: Soil deposit more than 6"thick.
Parting: Soil deposit Jess than 1/8" thick

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

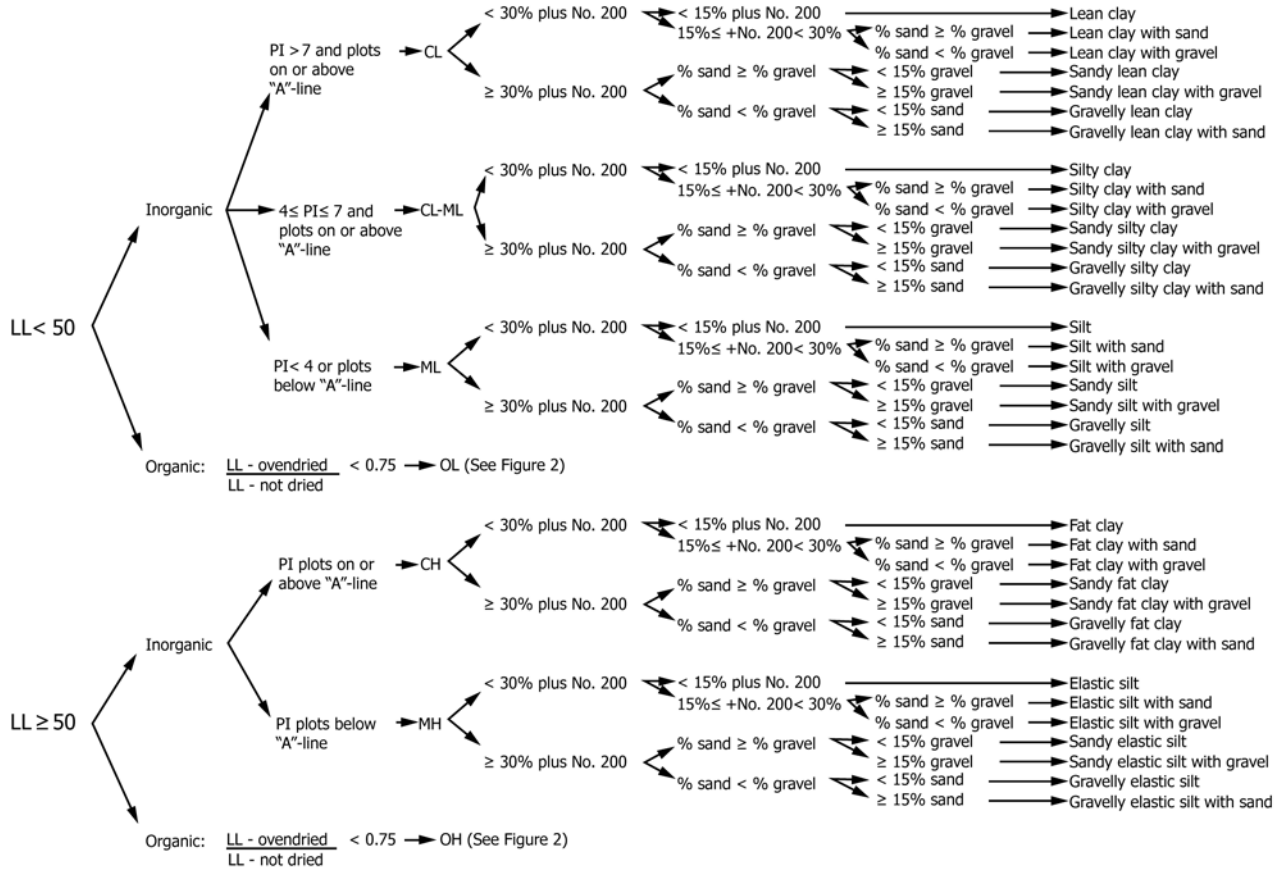


FIG. 1 Flow Chart for Classifying Fine-Grained Soil (50 % or More Passes No. 200 Sieve)

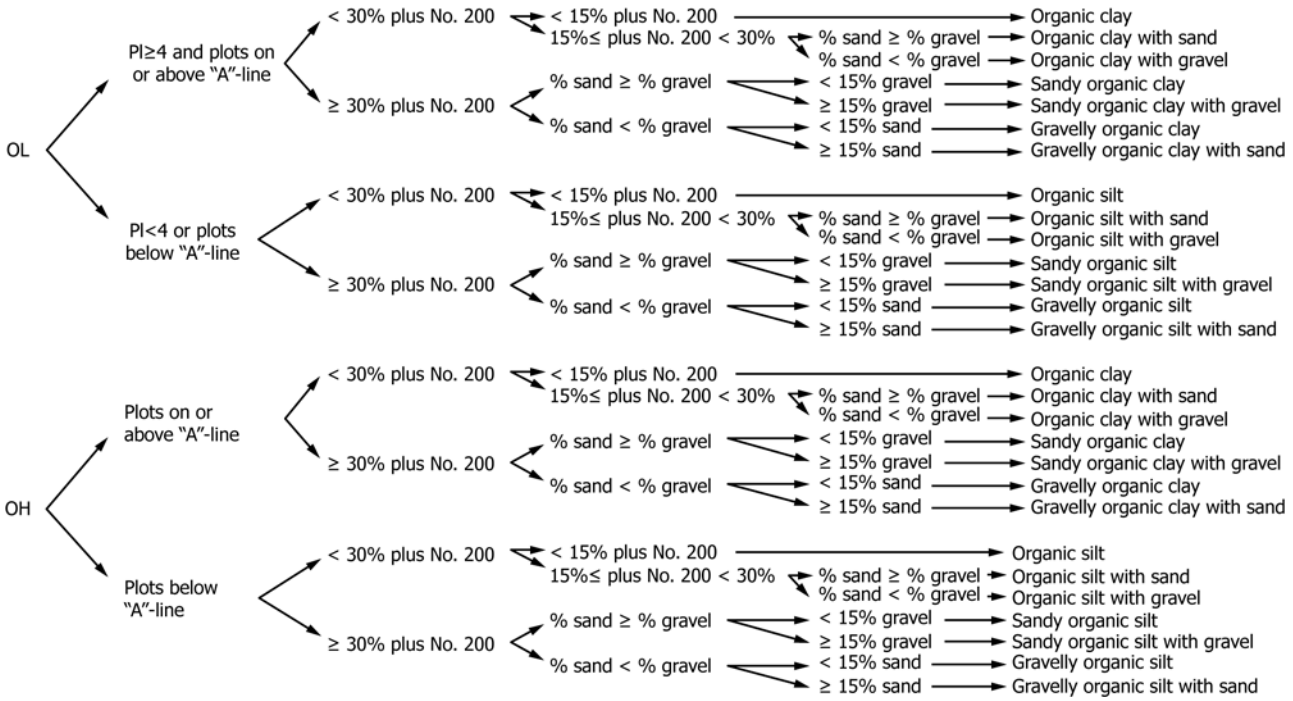


FIG. 2 Flow Chart for Classifying Organic Fine-Grained Soil (50 % or More Passes No. 200 Sieve)

Source ASTM D2487

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

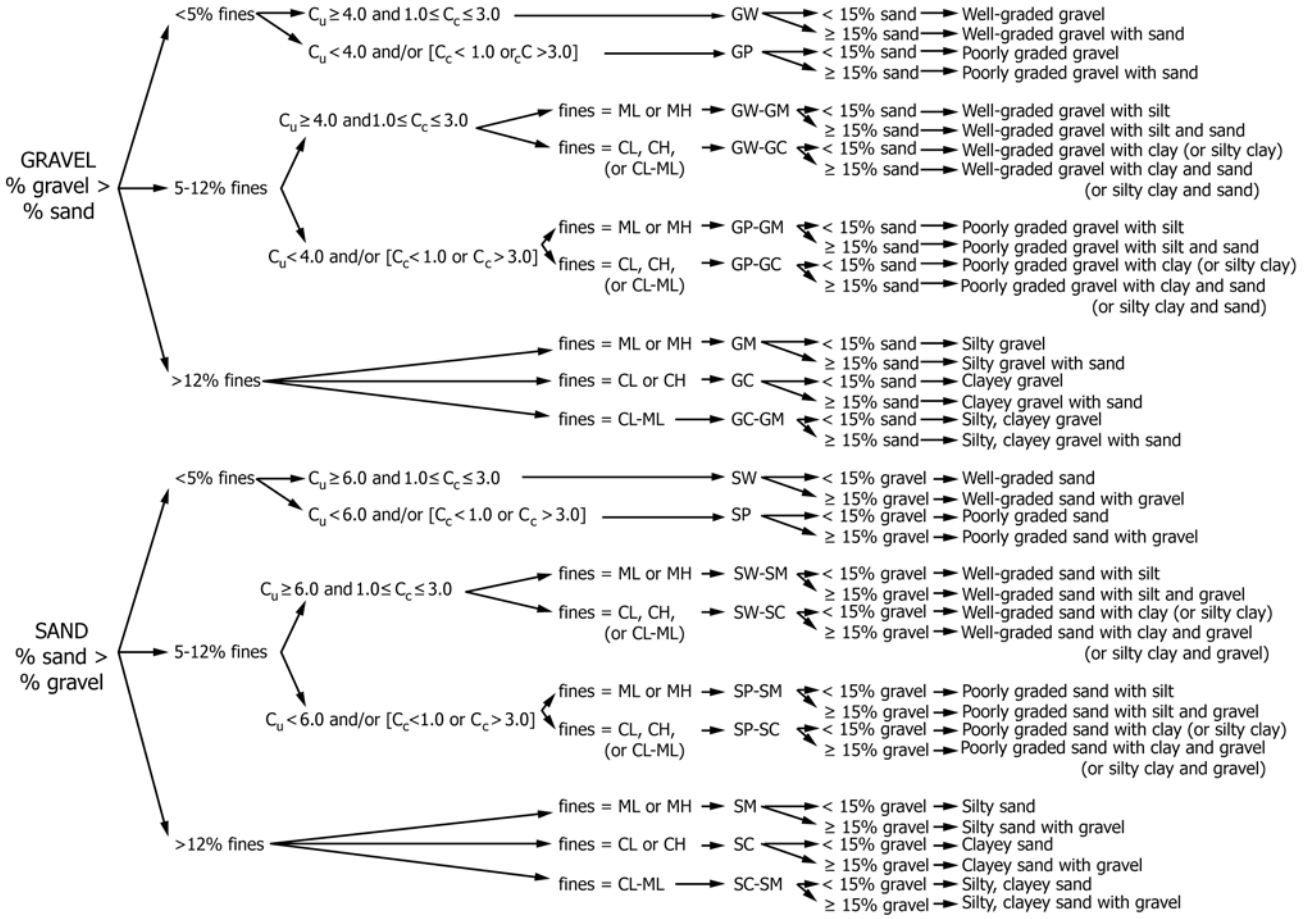


FIG. 3 Flow Chart for Classifying Coarse-Grained Soils (More Than 50 % Retained on No. 200 Sieve)

Source ASTM D2487

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

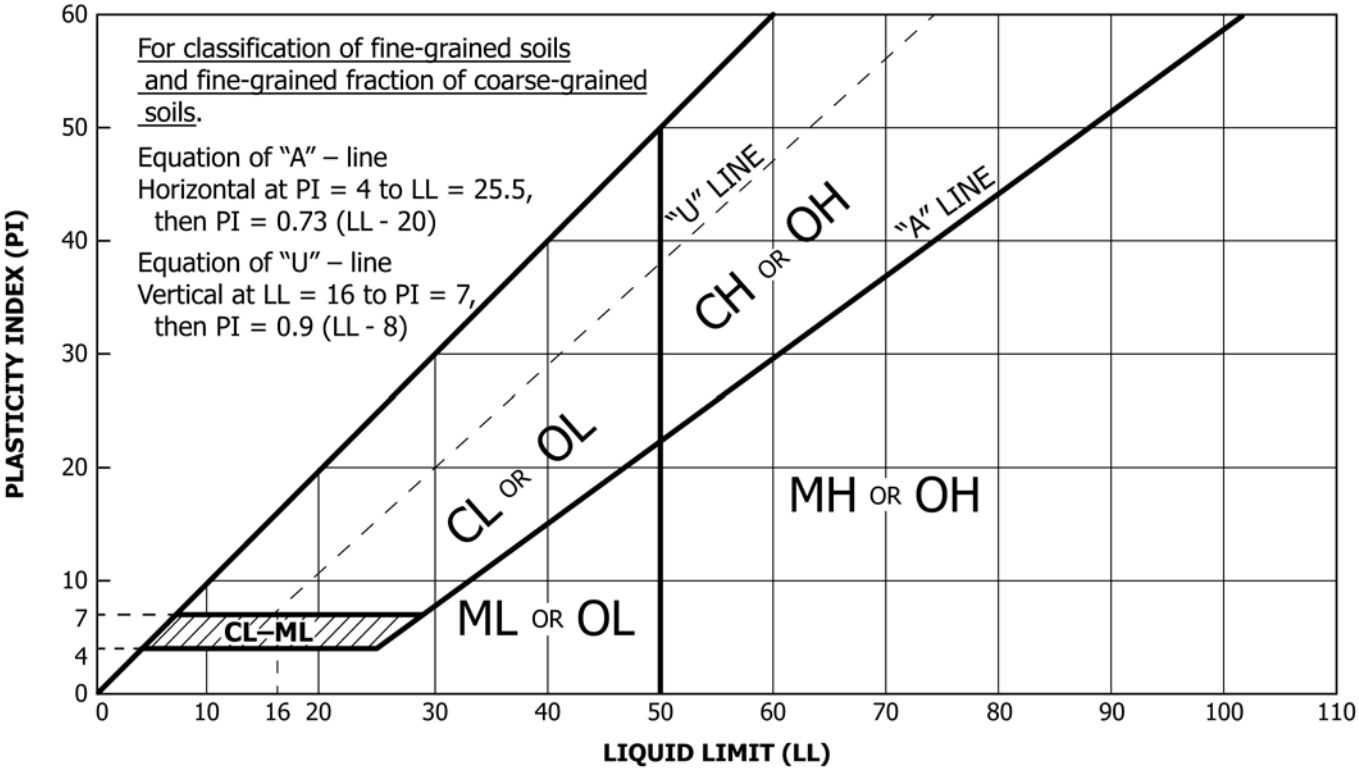


FIG. 4 Plasticity Chart

Source ASTM D2487

Renaissance Geotechnical Engineering, PLLC
3049 Hamburg Street
Schenectady, NY 12303
Telephone: 518-902-9222

KEY TO SYMBOLS

CLIENT BELL & SPINA

PROJECT NAME NYSOGS 47477 Yonkers Armory Renovation

PROJECT NUMBER 25.0015

PROJECT LOCATION 2 Quincy Place, Yonkers, New York

LITHOLOGIC SYMBOLS
(Unified Soil Classification System)


FILL: Fill (made ground)


SA CL-ML: Sandy Silty Clay


SMG: Silty SAND with Gravel


TOPSOIL: Topsoil

SAMPLER SYMBOLS


HS: Hollow Stem Auger


Split Spoon

WELL CONSTRUCTION SYMBOLS

ABBREVIATIONS

LL - LIQUID LIMIT (%)
PI - PLASTIC INDEX (%)
W - MOISTURE CONTENT (%)
DD - DRY DENSITY (PCF)
NP - NON PLASTIC
-200 - PERCENT PASSING NO. 200 SIEVE
PP - POCKET PENETROMETER (TSF)

TV - TORVANE
PID - PHOTOIONIZATION DETECTOR
UC - UNCONFINED COMPRESSION
ppm - PARTS PER MILLION


Water Level at Time Drilling, or as Shown


Water Level at End of Drilling, or as Shown


Water Level After 24 Hours, or as Shown

KEY TO SYMBOLS - GINT STD US LAB COLOR.GDT - 6/24/25 10:16 - C:\USERS\RENAISSANCE\ONEDRIVE - RENAISSANCE GEOTECHNICAL ENGINEERING, PLLC\- PROJECTS\- 2025\- OGS PROJECTS\25.0015 - OGS 47477 RENOVATE STATE ARMORY NATIONAL GUAR

Attachment 3

Expanded Laboratory Test Result Graphs

Renaissance Geotechnical Engineering, PLLC
3049 Hamburg Street
Schenectady, NY 12303
Telephone: 518-902-9222

SUMMARY OF LABORATORY RESULTS

CLIENT BELL & SPINA

PROJECT NAME NYSOGS 47477 Yonkers Armory Renovation

PROJECT NUMBER 25.0015

PROJECT LOCATION 2 Quincy Place, Yonkers, New York

Borehole	Depth	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Size (mm)	%<#200 Sieve	Class-ification	Water Content (%)	Dry Density (pcf)	Satur-ation (%)	Void Ratio
B-1	2.0	NP	NP	NP	25	36	SM	8.6			
B-1	8.0	22	16	6	19	70	CL-ML	17.5			
B-1	10.0	NP	NP	NP	25	25	SM	7.8			
B-1	15.0	NP	NP	NP	50	37	SM	6.9			

LAB SUMMARY - GINT STD US LAB COLOR.GDT - 6/24/25 10:15 - C:\USERS\RENAISSANCE\ONEDRIVE - RENAISSANCE GEOTECHNICAL ENGINEERING, PLLC\- PROJECTS\- 2025\- OGS PROJECTS\25.0015 - OGS 47477 RENOVATE STATE ARMORY NATIONAL GUARD

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Fax: 518-630-6757

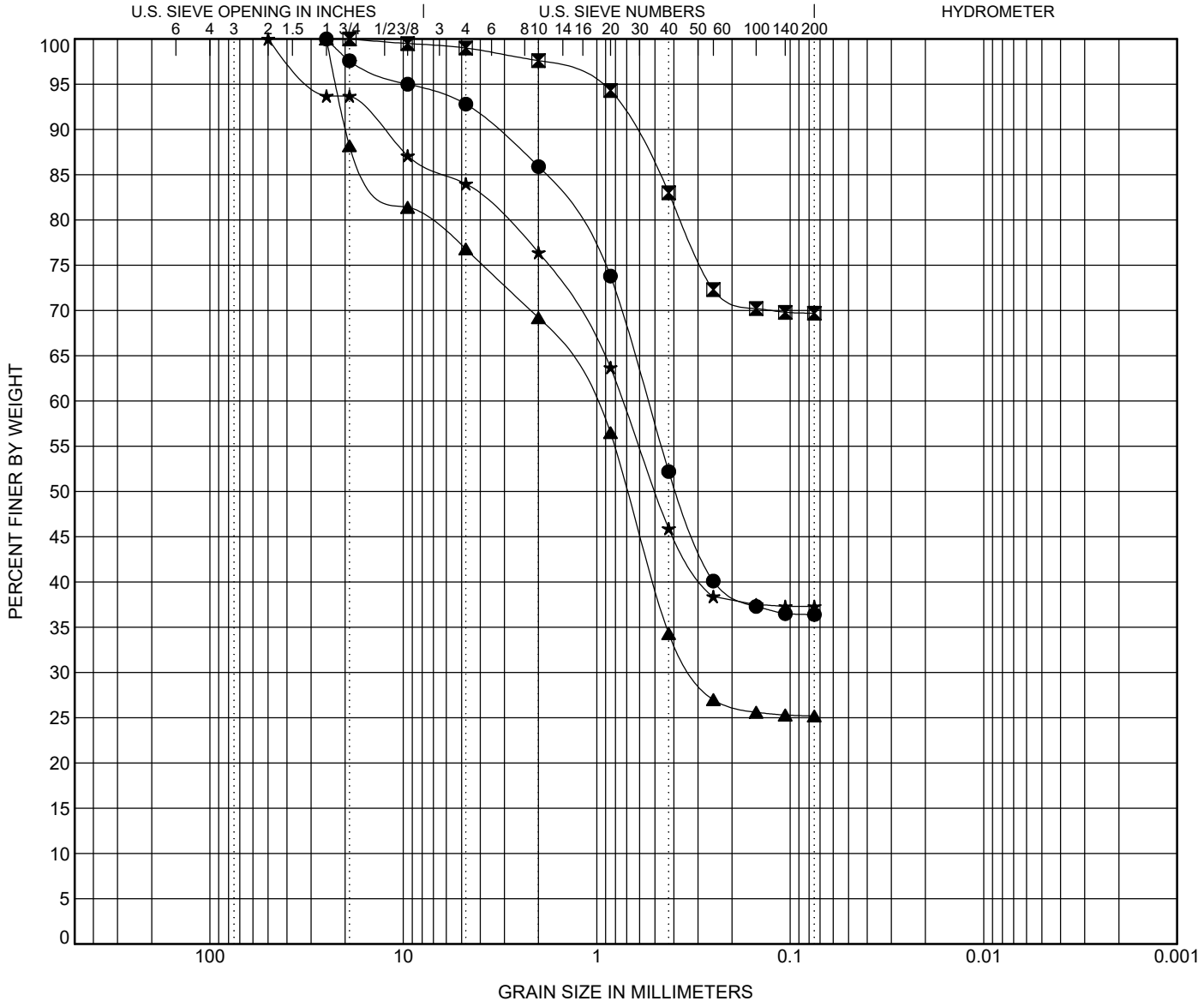
GRAIN SIZE DISTRIBUTION

CLIENT BELL & SPINA

PROJECT NAME NYSOGS 47477 Yonkers Armory Renovation

PROJECT NUMBER 25.0015

PROJECT LOCATION 2 Quincy Place, Yonkers, New York



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-1	2.0	SILTY SAND(SM)	NP	NP	NP		
⊠	B-1	8.0	SANDY SILTY CLAY(CL-ML)	22	16	6		
▲	B-1	10.0	SILTY SAND with GRAVEL(SM)	NP	NP	NP		
★	B-1	15.0	SILTY SAND with GRAVEL(SM)	NP	NP	NP		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-1	2.0	25	0.546			7.2	56.4	36.4	
⊠	B-1	8.0	19				1.0	29.3	69.7	
▲	B-1	10.0	25	1.076	0.311		23.2	51.6	25.2	
★	B-1	15.0	50	0.736			16.0	46.7	37.3	

GRAIN SIZE - GINT STD US LAB COLOR.GDT - 6/23/25 17:06 - C:\USERS\ALDIO\ONEDRIVE - RENAISSANCE GEOTECHNICAL ENGINEERING, PLLC\- PROJECTS\- 2025\- OGS PROJECTS\25.0015 - OGS 47477 RENOVATE STATE ARMORY NATIONAL GUARD, YONKERS, N

Attachment 3

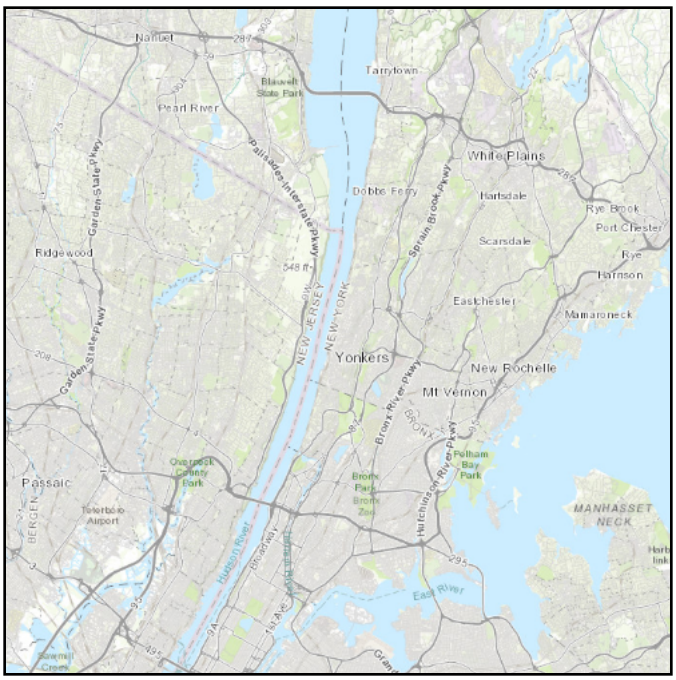
Seismic Output Data

ASCE Hazards Report

Address:
2 Quincy Pl
Yonkers, New York
10701

Standard:	ASCE/SEI 7-16	**Latitude:**	40.938352
Risk Category:	II	**Longitude:**	-73.89689
Soil Class:	D - Default (see Section 11.4.3)	**Elevation:**	99.30562790218944 ft (NAVD 88)





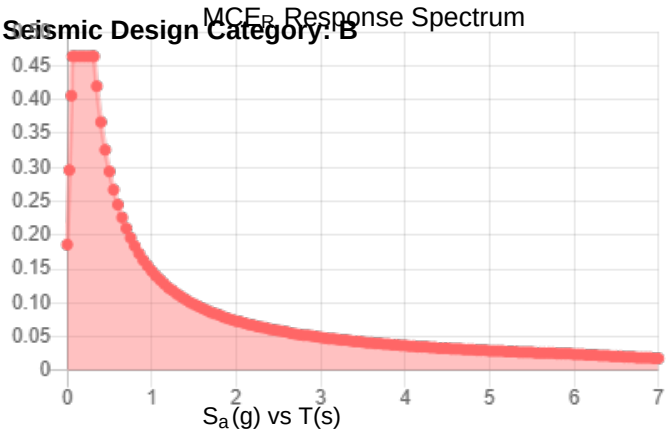
Seismic

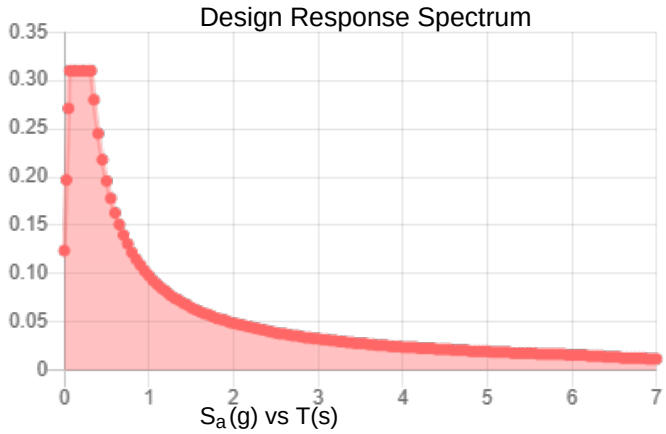
Site Soil Class: D - Default (see Section 11.4.3)

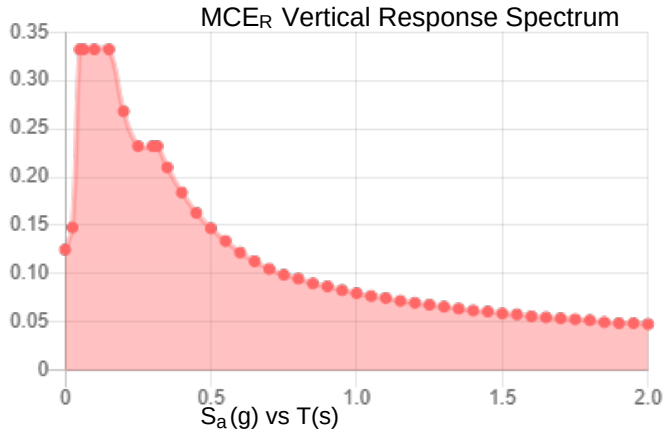
Results:

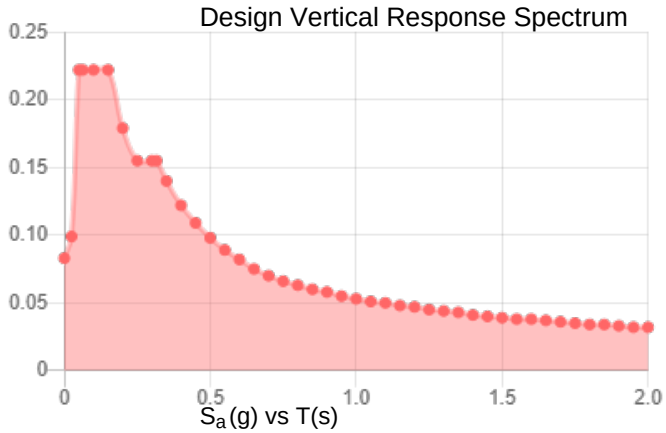
S_S :	0.297	S_{D1} :	0.098
S_1 :	0.061	T_L :	6
F_a :	1.562	PGA :	0.185
F_v :	2.4	PGA_M :	0.264
S_{MS} :	0.464	F_{PGA} :	1.431
S_{M1} :	0.147	I_e :	1
S_{DS} :	0.31	C_v :	0.894

Seismic Design Category: B









Data Accessed: **Tue Jun 24 2025**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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Ambient Environmental, Inc.
Building Science and EHS Solutions
NYS Certified WBE,
SBA EDWOSB & DBE

April 28, 2025

Mr. James Paolini
Bell & Spina Architects
215 Wyoming Street
Syracuse, NY 13204
Ph. 315-488-0377
M. 315-436-7736
jpaolini@bellandspina.com

RE: Hazardous Materials Survey Report
Pre-Renovation
Asbestos, Lead-Based Paint, and PCB in Caulk
Yonkers Armory
127 N Broadway
Yonkers, NY 10701
Ambient Project Number: 250204AA

Dear Mr. Paolini:

Ambient Environmental, Inc. is pleased to submit the attached Hazardous Materials Survey Report for asbestos, lead-based paint, and polychlorinated biphenyls (PCB) in caulk at the above-referenced site. This report includes the procedures and methodologies followed, analytical laboratory results, and applicable conclusions and recommendations.

Ambient appreciates the opportunity to serve Bell & Spina Architects and we look forward to working with you in the future. In the meantime, if you have questions or comments regarding the information in this report or if we can be of further assistance, please do not hesitate to contact us.

Sincerely,
Ambient Environmental, Inc.

C.D. Wolford
Operations Lead

Kevin Jones
Inspector
Asbestos License # 24-6LTTH-SHAB

Enclosure

Ambient Environmental, Inc.
Building Science and EHS Solutions
NYS Certified WBE,
SBA EDWOSB & DBE

HAZARDOUS MATERIALS SURVEY
Pre-Renovation
Asbestos, Lead-Based Paint, and PCB in Caulk

Yonkers Armory
127 N Broadway
Yonkers, NY 10701

Survey Date(s): April 7-8, 2025

Prepared for:

Mr. James Paolini
Bell & Spina Architects
215 Wyoming Street
Syracuse, NY 13204

Prepared by:

Ambient Environmental, Inc.
828 Washington Ave.
Albany, New York 12203

Ambient Project No. 250204AA

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ATTACHMENTS

Attachment A Asbestos Results and Asbestos Laboratory Analysis Report with Chain of Custody Documentation

Attachment B Lead-Based Paint Testing Results

Attachment C PCB Results and Laboratory Analysis Report with Chain of Custody Documentation

Attachment D Hazardous Material Location Drawings

Attachment E Photographic Documentation

Attachment F Company, Inspector and Laboratory Accreditations and Licenses

Attachment G Historical Documentation

1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this project was to conduct a pre-renovation hazardous materials survey for asbestos, lead-based paint (LBP), and polychlorinated biphenyls (PCB) in caulk at Yonkers Armory, 127 N Broadway, Yonkers, NY 10701 (The Site). The areas inspected were the interior and exterior of the building with the exception of the roof. Ambient was provided with historical survey reports that were utilized for this inspection and only sampled materials that had not previously been sampled. Please review the Historical Reports located in attachment G for additional information. Ambient Environmental, Inc. (Ambient) provided the following services for Bell & Spina Architects (Client) in accordance with Ambient proposal number 2025-02-0068.

Conduct a representative Hazardous Materials Survey in the identified building, which includes:

- Survey the site building.
- Identify accessible suspect asbestos-containing materials (ACMs) that were not previously tested using limited destructive means.
- Quantify ACMs, including material condition and location.
- Collect and analyze bulk samples of suspect friable and non-friable materials to eliminate suspect materials as asbestos containing.
- Conduct a limited lead-based paint inspection of the building with a Viken Detection Pb200e Lead Paint Analyzer.
- Collect and analyze bulk samples of potential PCB containing window/door caulk.

2.0 EXECUTIVE SUMMARY

The inspection was conducted by NYS licensed and AHERA trained asbestos inspectors and trained lead inspectors. The inspection involved visual examinations and sampling of suspect materials that may be impacted by planned renovation projects.

Inspection results revealed the following findings:

- **The renovation area does contain asbestos containing materials**
- **The renovation area does contain lead-based paint**
- **The renovation does not contain PCBs in caulk**

Please see attachments and specific report sections for sample locations, type of materials and analytical results.

3.0 ASBESTOS-CONTAINING MATERIALS SURVEY

Ambient performed an asbestos-containing material survey for planned renovations at the subject property. Ambient examined previous reports, if available, to determine if adequate sampling was performed in the work areas and collected additional samples that appeared to be deficient. New York State certified and AHERA trained asbestos inspectors conducted the asbestos survey of the area.

The building was visually inspected for the presence of any additional building materials in the path of renovation that are suspected to contain asbestos. Bulk samples of the newly identified suspect ACMs were collected and placed into individual containers for transport to a National Voluntary Laboratory Accreditation Program (NVLAP) and a New York State Department of Health Environmental Laboratory Approval Program (ELAP)-accredited laboratory for analysis. Materials visibly identified as non-asbestos (fibrous glass, foam rubber, wood, etc.) were not sampled. The asbestos survey consisted of three basic procedures: **1)** conducting a visual inspection of the structures; **2)** identifying homogeneous areas (HAs) of suspect surfacing, thermal system insulation, and miscellaneous materials; and **3)** sampling accessible, friable and non-friable suspect materials.

3.1 Sampling Protocol

3.1.1 Homogeneous Areas

Prior to collecting any samples, HAs were identified and listed to develop a sampling strategy. A homogeneous sampling area can be described as one or more areas of material that are similar in appearance and texture and that have the same installation date and function. The actual number of samples collected from each homogeneous sampling area may vary, based on the type of material and the professional judgment of the inspector.

3.1.2 Hazard Assessment Factors

From the list of suspect homogeneous materials, a physical assessment was performed for each material on the list. A physical assessment includes evaluating the condition, assessing the potential for disturbance, and determining the friability of each material. Friability is a term used to describe the ease in which a building material inherently lends itself to disturbance. By definition, "friable" materials are those that can be crumbled or reduced to powder by hand pressure when dry. Each material on the list was further classified into one of three categories, which have specific sampling requirements for each category.

Surfacing Materials:	Refers to spray-applied or troweled surfaces such as plaster ceilings and walls, fireproofing, textured paints, textured plasters, and spray-applied acoustical surfaces.
Thermal System Insulation:	Refers to insulation used to inhibit heat gain or loss on pipes, boilers, tanks, ducts, and various other building components.
Miscellaneous Materials:	Refers to friable and non-friable products and materials that do not fit in any of the above two categories such as resilient floor covering, baseboards, mastics, adhesives, roofing material, caulking, glazing, and siding. This category also contains wallboard and ceiling tile.

All confirmed ACMs were then assessed by their condition as good (intact), fair (damaged) or poor (significantly damaged) per Title 40 Code of Federal Regulations Part 763. Material with localized significant damage was also assessed as poor when observed.

3.1.3 Sampling Strategy

The asbestos inspection was conducted according to New York State Department of Labor Industrial Code Rule 56 guidelines using a minimum number of samples collected from each HA, which also meets the sampling requirement found in 29 CFR 1926.1101.

Sample collection depends on the category that the HA falls into and the amount of material present, as follows:

GUIDELINES FOR DETERMINING THE NUMBER OF SAMPLES TO TAKE		
HA CATEGORY	**HA SIZE**	**SAMPLES REQUIRED**
Surfacing Materials	<1,000 SF	3
	1,000-5,000 SF	5
	>5,000 SF	7 or more
Thermal System Insulation	No Stipulation	3+ (Must also sample all repair patches)
Miscellaneous Materials	No Stipulation	Per AHERA, these materials must be sampled "in a manner sufficient to determine whether or not they contain asbestos" typically 2-3 samples based upon inspector judgment.

If the analytical results indicated that all the samples collected per HA did not contain asbestos, then the HA (material) would be considered a non-ACM. However, if the analytical results of one or more of the samples collected per HA indicate that asbestos is present in quantities of greater than 1 percent asbestos by weight (as defined by EPA), all of the HA (material) would be treated as an ACM regardless of any other analytical results. Material, which can visually be determined to be non-asbestos (i.e., fibrous glass, foam rubber, etc.) by the accredited inspector are not required to be sampled.

Miscellaneous materials require adequately representative sampling, which is typically done by collecting from two to three samples per material. Inspectors typically rely on other survey observations such as the condition, friability, and quantity of material to determine what would be a sufficient number of samples to accurately evaluate the presence or absence of asbestos content.

Actual collection of a bulk asbestos sample involves physically removing a small piece of material and placing it in a marked, airtight container. Sample containers are marked with a unique identification number, which is also noted in the field notes.

3.1.4 Laboratory Analytical Results

Samples were sent to AmeriSci New York in New York, New York for analysis. AmeriSci is fully accredited for bulk sample analysis under the Environmental Laboratory Approval Program (ELAP) administered by the New York State Department of Health, (ELAP# 11480). AmeriSci is also accredited by the National Voluntary Laboratory Accreditation Program (NVLAP No. 200546-0) for both air and bulk sampling.

- *Friable Samples* – Friable suspect asbestos containing material samples were analyzed utilizing Method EPA/600/R-93/116 with New York State ELAP 198.1 revision to facilitate compliance with both AHERA and the New York State Department of Health polarized light

microscopy (PLM) analytical techniques. All fibers observed were identified to determine whether or not they contained asbestos.

- *Non-Friable Samples* – Non-friable organically bound (NOB) suspect asbestos containing material samples were analyzed utilizing Method EPA/600/R-93/116 with New York State ELAP 198.6 and 198.4 revisions to facilitate compliance with both AHERA and the New York State Department of Health polarized light microscopy (PLM) and transmission electron microscopy (TEM) analytical techniques. These non-friable organically bound samples must be weighed to record initial sample weights, then subjected to muffle furnace and acid bath sample preparation to eliminate the organic constituents. If the remaining inorganic sample residue is 1% or less of the original sample weight, the sample is considered a non-asbestos containing material. If the remaining inorganic sample residue is greater than 1% of the original sample weight then the sample must be analyzed using either PLM or TEM analytical techniques to determine that the sample is an asbestos containing material (positive) or TEM to prove that the sample is a non-asbestos containing material (negative). A non-friable organically bound sample must be proven a non-asbestos containing material utilizing the NYS ELAP 198.4 TEM test method to be in compliance with the New York state Department of Health.

3.2 Asbestos Containing Material Results

The results of the asbestos survey conducted at the subject property can be found in Attachment A.

The building survey included limited destructive sampling for "hidden" materials. Therefore, the results of this survey may not be inclusive of <u>all</u> asbestos containing material that may be present in the pathway of demolition. If, during the course of renovation, any suspect material is discovered that is not listed on the table in Attachment A it must be treated as asbestos containing material and handled appropriately or sampled by an inspector and analyzed according to NYS and EPA regulations.

One (1) copy of the results of the building/structure asbestos survey shall be immediately transmitted by the building/structure owner as follows:

- One (1) copy of the completed asbestos survey shall be sent by the owner or their agent to the local government entity charged with issuing a permit for such demolition, renovation, remodeling or repair work under applicable State or local laws.
- The completed asbestos survey for controlled demolition (as per Subpart 56-11.5) or pre-demolition asbestos projects shall also be submitted to the appropriate Asbestos Control Bureau district office.
- The completed asbestos survey shall be kept on the construction site with the asbestos notification and variance, if required, throughout the duration of the asbestos project and any associated demolition, renovation, remodeling or repair project.

4.0 LEAD-BASED PAINT SURVEY

Ambient conducted a limited lead-based paint (LBP) investigation of building components which will be affected by proposed renovation work. The purpose of this investigation was to assess if building components contain actionable quantities of lead-based paint.

The U.S Environmental Protection Agency (EPA) and U.S. Department of Housing and Urban Development (HUD) has established a definition of lead-based paint as a paint or other surface coating that contains lead equal to or greater than 1.0 mg/cm^2 or 0.5% by weight (equivalent units are: 5,000 µg/g, 5,000 mg/kg, or 5,000 ppm by weight). Surface coatings include paint, shellac, varnish, or any other coating, including wallpaper, which covers painted surfaces. A limited inspection for lead-based paint using XRF instrumentation was conducted to determine if lead coated surfaces were affected. This inspection was not in full compliance with HUD guidelines.

4.1 Sampling Protocol

4.1.1 Methodology

Testing was performed using X-Ray Fluorescence in situ analysis (XRF) of painted construction materials. Ambient utilized the Pb200e analyzer manufactured by Viken Detection for this survey.
The Pb200e Lead Paint Analyzer is a complete lead paint analysis system that quickly, accurately, and non-destructively measures the concentration of LBP on surfaces. The Pb200e relies on the measurement of the K-shell X-rays to determine the amount of lead present in the painted surface. K-shell X-rays can penetrate many layers of paint and allow a measurement of the lead content of paint to be made without being significantly affected by the thickness or number of layers of paint on the surface of the sample.

The Pb200e can analyze and compute corrections for the differences in the energy spectrums relating to different substrates. This analysis of the energy spectrum means that the lead paint reading displayed on the instrument already accounts for any substrate effects and correction is not required by the operator. The Pb200e's field of view is limited to a depth of 3/8", deep enough to handle virtually all painted surfaces, but not prone to detect lead objects located behind the surface.

There are two measurement modes of operation in the Pb200e analyzer namely the "Action Level Mode" and the "Extended Reading Mode. In the "Action Level" mode, the analyzer automatically adjusts the measurement time to be the least time that is needed to make a definitive measurement with a 95% confidence level (2-sigma). The Pb200e analyzer will finish a measurement once the 2-sigma confidence level is achieved, and the data is statistically meaningful. This time period for conclusive measurements is typically between 1 to 5 seconds but can extend to a measurement of 60 seconds depending on the action level for abatement. Ambient utilized the Pb200e in the "Action Level" mode for the testing performed.

Upon arrival at the job site and once every four hours or after the day’s paint testing work was completed, a "validation test" was performed to assure that the instrument was operating properly. The “validation test” includes taking a series of three test measurements on the NIST

Paint Film Standard (SRM No. 2579) as required by the instrument's PCS. The individual readings and an average of the three readings were recorded and compared to the standards. In all cases the instrument was functioning within the standard deviation as defined by the manufacturer and the PCS. All validation readings are recorded in the XRF in the order in which they were taken at the site. If for any reason the XRF does not pass the quality control procedures, it is Ambient's policy to replace that instrument with an XRF that passes the above criteria for calibration.

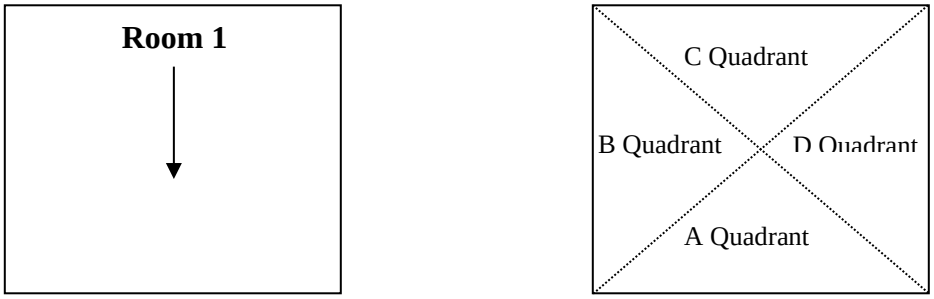
The parameters used to interpret XRF results are outlined in the HUD Guidelines and the Performance Characteristics Sheet (PCS) in Attachment B. According to the PCS, each XRF result is classified as positive for LBP if the result is greater than or equal to 1.0 mg/cm2 or negative for LBP if the result is below 1.0 mg/cm2.

When measurable amounts of lead are reported in the XRF result, the paint is classified by OSHA as a lead containing material.

4.1.2 Strategy

Location identifiers (reading numbers) were assigned to each room component. Each location sampled has a unique number. The associated sample results will be listed by room number, room location, room name, location in the space and description of material sampled. By convention a sample location is assigned a letter designator for each of the four walls. This divides the space into four equal quadrants, each quadrant consisting of a wall, portion of the floor and a portion of the ceiling. Please see Diagram 1. These letter designators are A, B, C and D. On the diagrams provided, the letter designators are marked for each of the quadrants. In this fashion the sampled space, location in the space and the description of the material sampled can be identified on the attached drawings and associated results table.

Diagram 1



4.2 Lead-Based Paint Results

The results of the lead-based paint survey conducted at the subject property can be found in Attachment B.

4.3 Recommendations

Any contractor disturbing a lead-based or lead containing paint is directed to comply with all applicable laws and regulations governing the disturbance of lead-based or lead containing materials including but not limited to *Occupational Safety and Health Administration (OSHA)* standards including *Construction Lead Standard 29 CFR 1926.62*. Air monitoring for employee exposures should be performed in accordance with the National Institute for Occupational Safety and Health (NIOSH) 7300 Method or equivalent. As an alternative to air monitoring, the contractor may provide objective data per 29 CFR 1926.62 Section (d)(3)(iv). The contractor shall employ work practices and controls to prevent the occurrence of lead contamination at the Site.

5.0 POLYCHLORINATED BIPHENYL (PCB) SURVEY

Ambient sampled suspect PCB containing caulk that could be impacted by the upcoming renovation and analyzed it for Polychlorinated Biphenyl (PCB) content.

The PCB survey involved a visual examination and sampling of caulk materials that may be impacted by the planned renovation projects. PCB, or Polychlorinated Biphenyl, was used in various products including caulking material from 1930 to approximately 1979 when PCB were banned by Congress. PCB are listed to be Probable Human Carcinogens by the ATSDR (Agency for Toxic Substances and Disease Registry), the National Cancer Institute and the World Health Organization.

PCB-containing materials are regulated under the Toxic Substances Control Act (TSCA) and 40 CFR 761 and are considered a regulated hazardous material at concentrations equal to or greater than 50 ppm (50,000 ppb). PCB must be segregated from construction debris and then be taken to a hazardous waste landfill in accordance with U.S. EPA regulations under the Toxic Substances Control Act (40 CFR761.62) and NYSDEC hazardous waste regulations (6NYCRR370-373). PCB can also be incinerated at an approved facility. There are also alternative methods for PCB destruction.

Bulk samples were collected and submitted to Schneider Labs, 2512 W. Cary Street, Richmond, Virginia. The samples were analyzed using EPA SW-846 Method 8082 PCB by Gas Chromatography.

5.1 Polychlorinated Biphenyls (PCB) Results

The results of the PCB survey conducted can be found in Attachment C.

6.0 ASSUMPTIONS, LIMITATIONS, AND OTHER CONCERNS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted during the inspection of the subject property.

- Ambient's selection of sample locations and frequency of sampling was based on observations and the assumption that like materials in the same area are homogeneous in content.

- Refer to Section 1.0 Purpose and Scope of Services of this report to see clarification of survey locations that were in our scope of work.
- Limited wiring and electrical components were inspected as the building power was live at the time of the survey. No cloth covered wiring or transite type electrical components were observed. Other components that were not observed may contain asbestos.
- Ambient inspected mirrors located throughout the building and determined that the ones with metal frames typically located above the sinks appear to have a hanger bracket. There are some pieces of mirror glass that do appear to be glued to the wall. These mirrors may have glue dabs that contain asbestos.
- Ambient observed to the best of their ability the inside of ductwork and other building mechanical systems but destruction or disassembly is required to gain complete access. These items may contain asbestos.
- Ambient performed limited inspection of exterior areas below grade in the location of the proposed elevator. Buried piping, and other items may exist below grade which may contain asbestos.
- Floor levelers, seam sealers, adhesives, concrete sealers, and other materials below flooring layers may exist. The limited destructive nature of sampling may not have discovered these materials as only small areas of large expanses of flooring are accessed. The removal of flooring and mastics is to include the removal of these items as well and all other materials down to the concrete substrate.
- The components of the windows/doors that were accessible without demolition were inspected. Limited intrusive demolition was performed during this inspection. There may be additional materials concealed beneath or behind window/door frames. Only full removal of the window/door unit would reveal these materials.
- The lead-based paint inspection was limited to representative accessible painted surfaces that are expected to be impacted by the planned renovation or demolition as of the date of the inspection. Representative locations were selected based on available information including construction and renovation history, conditions observed during the paint inspection and inspector safety when accessing the surfaces. OSHA requires the use of lead safe work practices to protect employees who are disturbing any lead containing material including, but not limited to, components coated with lead-based paint or varnish.
- Ambient relied on historical sampling data provided by the client if the analysis methods met current regulatory requirements.
- Ambient drilled several holes in walls but raw vermiculite insulation was not found during this inspection; however, vermiculite insulation may exist in concealed spaces in the building. Currently, there is no approved analytical methodology to confirm vermiculite as non-asbestos; therefore, it automatically must be contaminated with asbestos in New York State. If encountered during renovation it must be handled as an asbestos containing material. Please refer to this link for more information http://www2.epa.gov/asbestos/protect-your-family-asbestos-contaminated-vermiculite-insulation

- Although there was no asbestos containing Thermal System Insulation (TSI) or pipe insulation found there may be TSI or pipe insulation found in unseen cavities or wet walls. A reasonable attempt was made to identify all TSI without performing full demolition.
- Ambient performed limited coring/destructive sampling of floors, walls, and ceilings during the inspection. However, only full demolition would reveal "hidden" asbestos containing materials. Care should be taken during demolition/renovation of the building.
- This report reflects the conditions found at the date and time of the inspections. Conditions of the area may change due to external events or forces. Re-inspection of the area may be required prior to the start of any work if an extended period has passed or if disturbances have occurred.
- All locations on drawings are approximate and all quantities are estimated. Any contractor or other user of this report is required to physically visit the site to verify all measurements and confirm the quantities of materials to be removed, to be bid for removal, or for any other purpose.

All construction personnel, as well as individuals who have access to locations where ACM exists, should be informed of its presence and the proper work practices in these areas. Conspicuous labeling of all ACM is suggested to ensure personnel is adequately informed. Personnel should be informed not to rest, lean or store material or equipment on or near these surfaces and not to cut, saw, drill, sand or disturb ACM. All removal, disturbance and repair of ACM should be performed in compliance with Title 12 NYCRR Part 56 by persons properly trained to handle ACM. Facility custodial and maintenance personnel should receive training commensurate with their work activities; as defined in 29 CFR 1910.1001.

The report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos or lead abatement contractors in locating ACM. Under no circumstances is the report to be utilized as a bidding document or as a project specification document since it does not have all the components required to serve as an Asbestos Project Design document or an Abatement Workplan.

Our professional services have been performed, our findings obtained, and our conclusions and recommendations prepared in accordance with customary principles and practices in the fields of environmental science and engineering. This statement is in lieu of other statements either expressed or implied. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

Ambient inspected and sampled materials, which were observable and accessible to the survey team. It is possible, however, that additional suspect materials may exist within interstitial spaces (i.e. underground chases, plenums, wall cavities, beneath pavement/asphalts pathways, etc.), which were not accessible or not made accessible and as a result, not noted in this report.

If questions arise regarding asbestos in materials/locations that were not tested by Ambient, then additional survey services should be procured to test these locations. Ambient makes no representation or warranty concerning the standards and specifications provided in applicable regulations. Any materials that have not been tested and/or found during future investigation must be assumed positive for asbestos, lead-based paint and/or PCB (if applicable).

ATTACHMENT A

ASBESTOS RESULTS AND ASBESTOS LABORATORY ANALYSIS REPORT WITH CHAIN OF CUSTODY DOCUMENTATION

BELL & SPINA ARCHITECTS
YONKERS ARMORY
127 N BROADWAY, YONKERS, NY 10701
SUMMARY OF ASBESTOS SAMPLES AND ANALYSIS RESULTS

Homogeneous Area Number	Bulk Sample ID Number	Sampled Material (T, S, M)	Sample Location	Friability (N/F)	Condition (G, D, SD)	Quantity	Homogeneous Area	Asbestos Content (Type & %)
001	01	Foil Faced Duct Insulation (T)	Upper Level – Conference Room 111	N	G	N/A	N/A	NAD
001	02	Foil Faced Duct Insulation (T)	Upper Level – Conference Room 111	N	G	N/A	N/A	NAD
001	03	Foil Faced Duct Insulation (T)	Upper Level – Conference Room 111	N	G	N/A	N/A	NAD
002	01	Gray Duct Sealer (M)	Upper Level – Room 118	N	G	N/A	N/A	NAD
002	02	Gray Duct Sealer (M)	Upper Level – Room 118	N	G	N/A	N/A	NAD
003	01	Foil Backed Heating Pipe Insulation (T)	Upper Level – Room 116	N	G	N/A	N/A	NAD
003	02	Foil Backed Heating Pipe Insulation (T)	Upper Level – Room 116	N	G	N/A	N/A	NAD
003	03	Foil Backed Heating Pipe Insulation (T)	Upper Level – Room 116	N	G	N/A	N/A	NAD
004	01	White Pipe Insulation Mastic (M)	Upper Level – Conference Room 111	N	G	N/A	N/A	NAD
004	02	White Pipe Insulation Mastic (M)	Upper Level – Conference Room 111	N	G	N/A	N/A	NAD
005	01	CMU Wall (M)	Upper Level – Corridor	F	G	N/A	N/A	NAD
005	02	CMU Wall (M)	Upper Level – Corridor	F	G	N/A	N/A	NAD
006	01	Red Epoxy Floor (S)	Upper Level – Women's Latrine Room 134	F	G	N/A	N/A	NAD
006	02	Red Epoxy Floor (S)	Upper Level – Women's Latrine Room 134	F	G	N/A	N/A	NAD
006	03	Red Epoxy Floor (S)	Upper Level – Women's Latrine Room 134	F	G	N/A	N/A	NAD
007	01	White Expansion Joint Caulk (M)	Upper Level – Room 127	N	G	N/A	N/A	NAD
007	02	White Expansion Joint Caulk (M)	Upper Level – Room 127	N	G	N/A	N/A	NAD
008	01	White Caulk on Window Frame to CMU Wall (M)	Upper Level – Room 127	N	G	N/A	N/A	NAD
008	02	White Caulk on Window Frame to CMU Wall (M)	Upper Level – Room 127	N	G	N/A	N/A	NAD

BELL & SPINA ARCHITECTS
YONKERS ARMORY
127 N BROADWAY, YONKERS, NY 10701
SUMMARY OF ASBESTOS SAMPLES AND ANALYSIS RESULTS

Homogeneous Area Number	Bulk Sample ID Number	Sampled Material (T, S, M)	Sample Location	Friability (N/F)	Condition (G, D, SD)	Quantity	Homogeneous Area	Asbestos Content (Type & %)
009	01	Black Window Glazing (M)	Upper Level – Room 127	N	G	850 LF or 36 SF (25 Windows)	Upper Level	9.7% Chrysotile
009	02	Black Window Glazing (M)	Upper Level – Room 127	N	G			NA/PS
010	01	Beige Wall Paint (S)	Upper Level – Room 127	N	G	N/A	N/A	NAD
010	02	Beige Wall Paint (S)	Upper Level – Room 116	N	G	N/A	N/A	NAD
010	03	Beige Wall Paint (S)	Upper Level – Room 116	N	G	N/A	N/A	NAD
010	04	Beige Wall Paint (S)	Upper Level – Room 111	N	G	N/A	N/A	NAD
010	05	Beige Wall Paint (S)	Upper Level – Room 111	N	G	N/A	N/A	NAD
011	01	Gray Floor Paint (S)	Upper Level – Room 133	N	G	N/A	N/A	NAD
011	02	Gray Floor Paint (S)	Upper Level – Room 133	N	G	N/A	N/A	NAD
011	03	Gray Floor Paint (S)	Upper Level – Room 133	N	G	N/A	N/A	NAD
012	01	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G	N/A	N/A	NAD
012	02	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G	N/A	N/A	NAD
012	03	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G	N/A	N/A	NAD
012	04	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G	N/A	N/A	NAD
012	05	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G	N/A	N/A	NAD
012	06	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G	N/A	N/A	NAD
012	07	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G	N/A	N/A	NAD
013	01	Yellow Wall Paint (S)	Lower Level – Assembly Hall 5	N	G	N/A	N/A	NAD
013	02	Yellow Wall Paint (S)	Lower Level – Assembly Hall 5	N	G	N/A	N/A	NAD
013	03	Yellow Wall Paint (S)	Lower Level – Assembly Hall 5	N	G	N/A	N/A	NAD

BELL & SPINA ARCHITECTS
YONKERS ARMORY
127 N BROADWAY, YONKERS, NY 10701
SUMMARY OF ASBESTOS SAMPLES AND ANALYSIS RESULTS

Homogeneous Area Number	Bulk Sample ID Number	Sampled Material (T, S, M)	Sample Location	Friability (N/F)	Condition (G, D, SD)	Quantity	Homogeneous Area	Asbestos Content (Type & %)
013	04	Yellow Wall Paint (S)	Lower Level – Assembly Hall 5	N	G	N/A	N/A	NAD
013	05	Yellow Wall Paint (S)	Lower Level – Assembly Hall 5	N	G	N/A	N/A	NAD
014	01	Black Electrical Wire Insulation (M)	Lower Level – Mechanical Room 1	N	G	N/A	N/A	NAD
014	02	Black Electrical Wire Insulation (M)	Lower Level – Mechanical Room 1	N	G	N/A	N/A	NAD
015	01	White Electrical Wire Insulation (M)	Lower Level – Mechanical Room 1	N	G	N/A	N/A	NAD
015	02	White Electrical Wire Insulation (M)	Lower Level – Mechanical Room 1	N	G	N/A	N/A	NAD
016	01	Brick Wall (M)	Exterior	F	G	N/A	N/A	NAD
016	02	Brick Wall (M)	Exterior	F	G	N/A	N/A	NAD
017	01	Tan Adhesive on Stair Tread (M)	Exterior	N	G	N/A	N/A	NAD
017	02	Tan Adhesive on Stair Tread (M)	Exterior	N	G	N/A	N/A	NAD
018	01	Tan Concrete Step (M)	Exterior	F	G	N/A	N/A	NAD
018	02	Tan Concrete Step (M)	Exterior	F	G	N/A	N/A	NAD
019	01	Concrete Sidewalk (M)	Exterior	F	G	N/A	N/A	NAD
019	02	Concrete Sidewalk (M)	Exterior	F	G	N/A	N/A	NAD
020	01	Sidewalk Caulk (M)	Exterior	N	G	N/A	N/A	NAD
020	02	Sidewalk Caulk (M)	Exterior	N	G	N/A	N/A	NAD
021	01	Foundation Sealer (M)	Exterior	N	G	N/A	N/A	NAD
021	02	Foundation Sealer (M)	Exterior	N	G	N/A	N/A	NAD

(T=TSI; S=Surfacing; M=Misc)

NAD = No asbestos detected

BELL & SPINA ARCHITECTS
YONKERS ARMORY
127 N BROADWAY, YONKERS, NY 10701
SUMMARY OF ASBESTOS SAMPLES AND ANALYSIS RESULTS

NA/PS = Not analyzed/positive stop

SF = Square Foot
LF = Linear Foot

* Quantities are estimates only and should be field verified.
* Quantities and homogenous locations only reflect renovation areas and do not represent other areas throughout the building.

Note: Refer to Assumptions & Limitations Section of the Report.

AmeriSci New York
117 EAST 30TH ST.
NEW YORK, NY 10016
TEL: (212) 679-8600 • FAX: (212) 679-3114

April 17, 2025

Ambient Environmental, Inc.
Attn: Joella Viscusi
828 Washington Avenue
Albany, NY 12203

RE: Ambient Environmental, Inc.
Job Number 225041730
P.O. #250204AA
250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

Dear Joella Viscusi:

Enclosed are the results of Asbestos Analysis - Bulk Protocol of the following Ambient Environmental, Inc. samples, received at AmeriSci on Wednesday, April 9, 2025, for a 5 day turnaround:

001-01, 001-02, 001-03, 002-01, 002-02, 003-01, 003-02, 003-03, 004-01, 004-02, 005-01, 005-02, 006-01, 006-02, 006-03, 007-01, 007-02, 008-01, 008-02, 009-01, 009-02, 010-01, 010-02, 010-03, 010-04, 010-05, 011-01, 011-02, 011-03, 012-01, 012-02, 012-03, 012-04, 012-05, 012-06, 012-07, 013-01, 013-02, 013-03, 013-04, 013-05, 014-01, 014-02, 015-01, 015-02, 016-01, 016-02, 017-01, 017-02, 018-01, 018-02, 019-01, 019-02, 020-01, 020-02, 021-01, 021-02

The 57 samples, placed in zip lock bag, were shipped to AmeriSci via Fed Ex. Ambient Environmental, Inc. requested ELAP PLM/TEM analysis of these samples.

The results of the analyses which were performed following ELAP Protocols 198.1 PLM Friable and/or 198.6 for PLM NOB. ELAP Protocol 198.4 TEM NOB guidelines are presented within the Summary Table of this report. The presence of matrix reduction data in the Summary Table normally indicates an NOB sample. For NOB samples the individual matrix reduction, combined PLM and TEM analysis results are listed in the Summary Bulk Asbestos Analysis Results in Table I. Complete PLM results for individual samples are presented in the PLM Bulk Asbestos Report. Samples near 1% asbestos may be analyzed by EPA 400 pt ct method (EPA 600-M4-82-020). This combined report relates ONLY to sample analysis expressed as percent composition by weight and percent asbestos. This report must not be used to claim product endorsement or approval by these laboratories, NVLAP, ELAP or any other associated agency. This report must not be reproduced, except in full without the written approval of the laboratory. This report may contain specific data not covered by NVLAP or ELAP accreditations respectively, if so identified in relevant footnotes.

AmeriSci appreciates this opportunity to serve your organization. Please contact us for any further assistance or with any questions.

Sincerely,

Marvin E. Brothers

President | Authorized Signatory

AmeriSci New York
117 EAST 30TH ST.
NEW YORK, NY 10016
TEL: (212) 679-8600 • FAX: (212) 679-3114

PLM Bulk Asbestos Report

Ambient Environmental, Inc.
Attn: Joella Viscusi
828 Washington Avenue

Albany, NY 12203

Date Received 4/9/2025 **AmeriSci Job #** 225041730
Date Examined 04/15/25 **P.O. #**
ELAP # 11480 **Page** 1 **of** 9

RE: 250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos	Notes
001-01 001	225041730-01	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
Location: Upper Level - Conference Room 111 - Foil Faced Duct Insulation (T) **Analyst Description:** Silver/Brown, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 50%, Fibrous glass 10%, Non-fibrous 40%				
001-02 001	225041730-02	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
Location: Upper Level - Conference Room 111 - Foil Faced Duct Insulation (T) **Analyst Description:** Silver/Brown, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 50%, Fibrous glass 10%, Non-fibrous 40%				
001-03 001	225041730-03	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
Location: Upper Level - Conference Room 111 - Foil Faced Duct Insulation (T) **Analyst Description:** Silver/Brown, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 50%, Fibrous glass 10%, Non-fibrous 40%				
002-01 002	225041730-04	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Upper Level - Room 118 - Gray Duct Sealer (M) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 3.2%				
002-02 002	225041730-05	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Upper Level - Room 118 - Gray Duct Sealer (M) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 3.3%				
003-01 003	225041730-06	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
Location: Upper Level - Room 116 - Foil Backed Heating Pipe Insulation (T) **Analyst Description:** White/Silver, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 50%, Fibrous glass 10%, Non-fibrous 40%				

See Reporting notes on last page

PLM Bulk Asbestos Report

250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos	Notes
003-02 003	225041730-07	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
Location: Upper Level - Room 116 - Foil Backed Heating Pipe Insulation (T) **Analyst Description:** White/Silver, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 50%, Fibrous glass 10%, Non-fibrous 40%				
003-03 003	225041730-08	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
Location: Upper Level - Room 116 - Foil Backed Heating Pipe Insulation (T) **Analyst Description:** White/Silver, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 50%, Fibrous glass 10%, Non-fibrous 40%				
004-01 004	225041730-09	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Upper Level - Conference Room 111 - White Pipe Insulation Mastic (M) **Analyst Description:** White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 22%				
004-02 004	225041730-10	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Upper Level - Conference Room 111 - White Pipe Insulation Mastic (M) **Analyst Description:** White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 20%				
005-01 005	225041730-11	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
Location: Upper Level - Corridor - CMU Wall (M) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%				
005-02 005	225041730-12	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
Location: Upper Level - Corridor - CMU Wall (M) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%				
006-01 006	225041730-13	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Upper Level - Women's Latrine Room 134 - Red Epoxy Floor (S) **Analyst Description:** Red, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 60%				

See Reporting notes on last page

PLM Bulk Asbestos Report

250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos	Notes
006-02 006	225041730-14	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Upper Level - Women's Latrine Room 134 - Red Epoxy Floor (S) **Analyst Description:** Red, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 60%				
006-03 006	225041730-15	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Upper Level - Women's Latrine Room 134 - Red Epoxy Floor (S) **Analyst Description:** Red, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 65%				
007-01 007	225041730-16	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Upper Level - Room 127 - White Expansion Joint Caulk (M) **Analyst Description:** White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 3.5%				
007-02 007	225041730-17	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Upper Level - Room 127 - White Expansion Joint Caulk (M) **Analyst Description:** White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 2.2%				
008-01 008	225041730-18	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Upper Level - Room 127 - White Caulk On Window Frame To CMU Wall (M) **Analyst Description:** White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.1%				
008-02 008	225041730-19	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Upper Level - Room 127 - White Caulk On Window Frame To CMU Wall (M) **Analyst Description:** White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 5.7%				
009-01 009	225041730-20	***Yes***	9.7% (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	
Location: Upper Level - Room 127 - Black Window Glazing (M) **Analyst Description:** Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 9.7% **Other Material:** Non-fibrous 14%				

See Reporting notes on last page

PLM Bulk Asbestos Report

250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos	Notes
009-02 009 **Location:** Upper Level - Room 127 - Black Window Glazing (M) **Analyst Description:** Bulk Material **Asbestos Types:** **Other Material:**	225041730-21		NA/PS	
010-01 010 **Location:** Upper Level - Room 127 - Beige Wall Paint (S) **Analyst Description:** Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 19%	225041730-22	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
010-02 010 **Location:** Upper Level - Room 116 - Beige Wall Paint (S) **Analyst Description:** Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 18%	225041730-23	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
010-03 010 **Location:** Upper Level - Room 116 - Beige Wall Paint (S) **Analyst Description:** Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 20%	225041730-24	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
010-04 010 **Location:** Upper Level - Room 111 - Beige Wall Paint (S) **Analyst Description:** Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 19%	225041730-25	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
010-05 010 **Location:** Upper Level - Room 111 - Beige Wall Paint (S) **Analyst Description:** Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 22%	225041730-26	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
011-01 011 **Location:** Upper Level - Room 133 - Gray Floor Paint (S) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 11%	225041730-27	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*

See Reporting notes on last page

PLM Bulk Asbestos Report

250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos	Notes
011-02 011 **Location:** Upper Level - Room 133 - Gray Floor Paint (S) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 6.3%	225041730-28	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
011-03 011 **Location:** Upper Level - Room 133 - Gray Floor Paint (S) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 16%	225041730-29	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
012-01 012 **Location:** Lower Level - Assembly Hall 5 - Off-White Wall Paint (S) **Analyst Description:** Off-White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 23%	225041730-30	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
012-02 012 **Location:** Lower Level - Assembly Hall 5 - Off-White Wall Paint (S) **Analyst Description:** Off-White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 25%	225041730-31	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
012-03 012 **Location:** Lower Level - Assembly Hall 5 - Off-White Wall Paint (S) **Analyst Description:** Off-White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 24%	225041730-32	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
012-04 012 **Location:** Lower Level - Assembly Hall 5 - Off-White Wall Paint (S) **Analyst Description:** Off-White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 27%	225041730-33	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
012-05 012 **Location:** Lower Level - Assembly Hall 5 - Off-White Wall Paint (S) **Analyst Description:** Off-White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 27%	225041730-34	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*

See Reporting notes on last page

PLM Bulk Asbestos Report

250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos	Notes
012-06 012 **Location:** Lower Level - Assembly Hall 5 - Off-White Wall Paint (S) **Analyst Description:** Off-White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 25%	225041730-35	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
012-07 012 **Location:** Lower Level - Assembly Hall 5 - Off-White Wall Paint (S) **Analyst Description:** Off-White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 26%	225041730-36	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
013-01 013 **Location:** Lower Level - Assembly Hall 5 - Yellow Wall Paint (S) **Analyst Description:** Yellow, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 28%	225041730-37	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
013-02 013 **Location:** Lower Level - Assembly Hall 5 - Yellow Wall Paint (S) **Analyst Description:** Yellow, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 30%	225041730-38	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
013-03 013 **Location:** Lower Level - Assembly Hall 5 - Yellow Wall Paint (S) **Analyst Description:** Yellow, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 30%	225041730-39	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
013-04 013 **Location:** Lower Level - Assembly Hall 5 - Yellow Wall Paint (S) **Analyst Description:** Yellow, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 28%	225041730-40	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
013-05 013 **Location:** Lower Level - Assembly Hall 5 - Yellow Wall Paint (S) **Analyst Description:** Yellow, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 29%	225041730-41	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*

See Reporting notes on last page

PLM Bulk Asbestos Report

250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos	Notes
014-01 014	225041730-42	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Lower Level - Mechanical Room 1 - Black Electrical Wire Insulation (M) **Analyst Description:** Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 5.1%				
014-02 014	225041730-43	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Lower Level - Mechanical Room 1 - Black Electrical Wire Insulation (M) **Analyst Description:** Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 7.4%				
015-01 015	225041730-44	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Lower Level - Mechanical Room 1 - White Electrical Wire Insulation (M) **Analyst Description:** White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 17%				
015-02 015	225041730-45	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Lower Level - Mechanical Room 1 - White Electrical Wire Insulation (M) **Analyst Description:** White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 15%				
016-01 016	225041730-46	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
Location: Exterior - Brick Wall (M) **Analyst Description:** Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%				
016-02 016	225041730-47	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
Location: Exterior - Brick Wall (M) **Analyst Description:** Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%				
017-01 017	225041730-48	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
Location: Exterior - Tan Adhesive On Stair Tread (M) **Analyst Description:** Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 21%				

See Reporting notes on last page

PLM Bulk Asbestos Report

250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos	Notes
017-02 017 **Location:** Exterior - Tan Adhesive On Stair Tread (M) **Analyst Description:** Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 23%	225041730-49	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
018-01 018 **Location:** Exterior - Tan Concrete Step (M) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%	225041730-50	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
018-02 018 **Location:** Exterior - Tan Concrete Step (M) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%	225041730-51	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
019-01 019 **Location:** Exterior - Concrete Sidewalk (M) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%	225041730-52	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
019-02 019 **Location:** Exterior - Concrete Sidewalk (M) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%	225041730-53	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 04/15/25	
020-01 020 **Location:** Exterior - Sidewalk Caulk (M) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.6%	225041730-54	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
020-02 020 **Location:** Exterior - Sidewalk Caulk (M) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.6%	225041730-55	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*

See Reporting notes on last page

PLM Bulk Asbestos Report

250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos	Notes
021-01 021 **Location:** Exterior - Foundation Sealer (M) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 54%	225041730-56	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*
021-02 021 **Location:** Exterior - Foundation Sealer (M) **Analyst Description:** Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 58%	225041730-57	***No***	Inconclusive - NAD (NOB by NYS ELAP 198.6) by John P. Koubiadis on 04/15/25	*1*

Reporting Notes:

(1) NAD results by NYS 198.6 are inconclusive and are not considered non-ACM

Analyzed by: John P. Koubiadis
Date: 4/15/2025

Reviewed by: Marwan A. Alahiri

*NAD/NSD =no asbestos detected; NA =not analyzed; NA/PS=not analyzed/positive stop, (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; PLM Bulk Asbestos Analysis using Olympus, Model BH-2 Pol Scope, Microscope, Serial #: 223705, by Appd E to Subpt E, 40 CFR 763 quantified by either CVES or 400 pt ct as noted for each analysis (NVLAP 200546-0), ELAP PLM Method 198.1 for NY friable samples, which includes the identification and quantitation of vermiculite, or ELAP 198.6 for NOB samples, or EPA 400 pt ct by EPA 600-M4-82-020 (NY ELAP Lab 11480); Note:PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab.This PLM report relates ONLY to the items tested. RI Cert AAL-094, CT Cert PH-0186, Mass Cert AA000054, NJ Lab ID #NY031.

END OF REPORT

Client Name: Ambient Environmental, Inc.

Table I

Summary of Bulk Asbestos Analysis Results by NYS ELAP 198.4

250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

AmeriSci Sample #	Client Sample#	HG Area	NOB Sample Weight (gram)	NOB Heat Sensitive Organic %	NOB Acid Soluble Inorganic %	NOB Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01	001-01	001	----	----	----	----	NAD	NA
Location: Upper Level - Conference Room 111 - Foil Faced Duct Insulation (T)								
02	001-02	001	----	----	----	----	NAD	NA
Location: Upper Level - Conference Room 111 - Foil Faced Duct Insulation (T)								
03	001-03	001	----	----	----	----	NAD	NA
Location: Upper Level - Conference Room 111 - Foil Faced Duct Insulation (T)								
04	002-01	002	0.194	25.8	71.0	3.2	NAD	NAD
Location: Upper Level - Room 118 - Gray Duct Sealer (M)								
05	002-02	002	0.261	26.1	70.7	3.3	NAD	NAD
Location: Upper Level - Room 118 - Gray Duct Sealer (M)								
06	003-01	003	----	----	----	----	NAD	NA
Location: Upper Level - Room 116 - Foil Backed Heating Pipe Insulation (T)								
07	003-02	003	----	----	----	----	NAD	NA
Location: Upper Level - Room 116 - Foil Backed Heating Pipe Insulation (T)								
08	003-03	003	----	----	----	----	NAD	NA
Location: Upper Level - Room 116 - Foil Backed Heating Pipe Insulation (T)								
09	004-01	004	0.133	37.4	40.5	22.2	NAD	NAD
Location: Upper Level - Conference Room 111 - White Pipe Insulation Mastic (M)								
10	004-02	004	0.189	38.4	41.6	20.0	NAD	NAD
Location: Upper Level - Conference Room 111 - White Pipe Insulation Mastic (M)								
11	005-01	005	----	----	----	----	NAD	NA
Location: Upper Level - Corridor - CMU Wall (M)								
12	005-02	005	----	----	----	----	NAD	NA
Location: Upper Level - Corridor - CMU Wall (M)								
13	006-01	006	0.248	22.9	16.7	60.4	NAD	NAD
Location: Upper Level - Women's Latrine Room 134 - Red Epoxy Floor (S)								
14	006-02	006	0.252	22.1	17.3	60.6	NAD	NAD
Location: Upper Level - Women's Latrine Room 134 - Red Epoxy Floor (S)								
15	006-03	006	0.303	20.5	13.9	65.7	NAD	NAD
Location: Upper Level - Women's Latrine Room 134 - Red Epoxy Floor (S)								
16	007-01	007	0.268	29.8	66.7	3.5	NAD	NAD
Location: Upper Level - Room 127 - White Expansion Joint Caulk (M)								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results by NYS ELAP 198.4

250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

AmeriSci Sample #	Client Sample#	HG Area	NOB Sample Weight (gram)	NOB Heat Sensitive Organic %	NOB Acid Soluble Inorganic %	NOB Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
17	007-02	007	0.236	29.3	68.5	2.2	NAD	NAD
Location: Upper Level - Room 127 - White Expansion Joint Caulk (M)								
18	008-01	008	0.208	28.7	71.1	0.1	NAD	NAD
Location: Upper Level - Room 127 - White Caulk On Window Frame To CMU Wall (M)								
19	008-02	008	0.180	28.5	65.8	5.7	NAD	NAD
Location: Upper Level - Room 127 - White Caulk On Window Frame To CMU Wall (M)								
20	009-01	009	0.182	41.2	34.6	14.5	Chrysotile 9.7	NA
Location: Upper Level - Room 127 - Black Window Glazing (M)								
21	009-02	009	0.189	41.7	35.3	22.9	NA/PS	NA
Location: Upper Level - Room 127 - Black Window Glazing (M)								
22	010-01	010	0.054	27.4	53.6	19.0	NAD	NAD
Location: Upper Level - Room 127 - Beige Wall Paint (S)								
23	010-02	010	0.090	28.7	52.5	18.7	NAD	NAD
Location: Upper Level - Room 116 - Beige Wall Paint (S)								
24	010-03	010	0.082	26.9	52.8	20.3	NAD	NAD
Location: Upper Level - Room 116 - Beige Wall Paint (S)								
25	010-04	010	0.071	31.0	49.7	19.3	NAD	NAD
Location: Upper Level - Room 111 - Beige Wall Paint (S)								
26	010-05	010	0.065	23.9	53.2	22.8	NAD	NAD
Location: Upper Level - Room 111 - Beige Wall Paint (S)								
27	011-01	011	0.051	66.7	22.2	11.2	NAD	NAD
Location: Upper Level - Room 133 - Gray Floor Paint (S)								
28	011-02	011	0.087	82.4	11.3	6.3	NAD	NAD
Location: Upper Level - Room 133 - Gray Floor Paint (S)								
29	011-03	011	0.062	57.7	25.3	16.9	NAD	NAD
Location: Upper Level - Room 133 - Gray Floor Paint (S)								
30	012-01	012	0.141	30.0	46.8	23.3	NAD	NAD
Location: Lower Level - Assembly Hall 5 - Off-White Wall Paint (S)								
31	012-02	012	0.206	28.5	46.1	25.4	NAD	NAD
Location: Lower Level - Assembly Hall 5 - Off-White Wall Paint (S)								
32	012-03	012	0.132	27.8	47.2	24.9	NAD	NAD
Location: Lower Level - Assembly Hall 5 - Off-White Wall Paint (S)								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results by NYS ELAP 198.4

250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

AmeriSci Sample #	Client Sample#	HG Area	NOB Sample Weight (gram)	NOB Heat Sensitive Organic %	NOB Acid Soluble Inorganic %	NOB Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
33	012-04	012	0.123	26.3	46.0	27.7	NAD	NAD
Location: Lower Level - Assembly Hall 5 - Off-White Wall Paint (S)								
34	012-05	012	0.218	29.2	43.2	27.6	NAD	NAD
Location: Lower Level - Assembly Hall 5 - Off-White Wall Paint (S)								
35	012-06	012	0.238	29.0	45.3	25.8	NAD	NAD
Location: Lower Level - Assembly Hall 5 - Off-White Wall Paint (S)								
36	012-07	012	0.220	29.7	44.0	26.3	NAD	NAD
Location: Lower Level - Assembly Hall 5 - Off-White Wall Paint (S)								
37	013-01	013	0.282	35.2	36.2	28.6	NAD	NAD
Location: Lower Level - Assembly Hall 5 - Yellow Wall Paint (S)								
38	013-02	013	0.338	33.9	35.2	30.9	NAD	NAD
Location: Lower Level - Assembly Hall 5 - Yellow Wall Paint (S)								
39	013-03	013	0.302	34.5	35.0	30.5	NAD	NAD
Location: Lower Level - Assembly Hall 5 - Yellow Wall Paint (S)								
40	013-04	013	0.241	31.8	40.2	28.0	NAD	NAD
Location: Lower Level - Assembly Hall 5 - Yellow Wall Paint (S)								
41	013-05	013	0.208	8.5	61.7	29.8	NAD	NAD
Location: Lower Level - Assembly Hall 5 - Yellow Wall Paint (S)								
42	014-01	014	0.168	86.9	8.0	5.1	NAD	NAD
Location: Lower Level - Mechanical Room 1 - Black Electrical Wire Insulation (M)								
43	014-02	014	0.184	86.7	5.9	7.4	NAD	NAD
Location: Lower Level - Mechanical Room 1 - Black Electrical Wire Insulation (M)								
44	015-01	015	0.183	75.9	7.0	17.0	NAD	NAD
Location: Lower Level - Mechanical Room 1 - White Electrical Wire Insulation (M)								
45	015-02	015	0.173	76.1	8.9	15.1	NAD	NAD
Location: Lower Level - Mechanical Room 1 - White Electrical Wire Insulation (M)								
46	016-01	016	----	----	----	----	NAD	NA
Location: Exterior - Brick Wall (M)								
47	016-02	016	----	----	----	----	NAD	NA
Location: Exterior - Brick Wall (M)								
48	017-01	017	0.251	63.3	15.3	21.4	NAD	NAD
Location: Exterior - Tan Adhesive On Stair Tread (M)								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results by NYS ELAP 198.4

250204AA; Bell & Spina Architects; Inspection Yonkers Armory, 127 N. Broadway, Yonkers, NY 10701, Yonkers Armory - Interior & Exterior

AmeriSci Sample #	Client Sample#	HG Area	NOB Sample Weight (gram)	NOB Heat Sensitive Organic %	NOB Acid Soluble Inorganic %	NOB Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
49	017-02	017	0.229	63.5	13.2	23.2	NAD	NAD
Location: Exterior - Tan Adhesive On Stair Tread (M)								
50	018-01	018	----	----	----	----	NAD	NA
Location: Exterior - Tan Concrete Step (M)								
51	018-02	018	----	----	----	----	NAD	NA
Location: Exterior - Tan Concrete Step (M)								
52	019-01	019	----	----	----	----	NAD	NA
Location: Exterior - Concrete Sidewalk (M)								
53	019-02	019	----	----	----	----	NAD	NA
Location: Exterior - Concrete Sidewalk (M)								
54	020-01	020	0.282	35.6	63.8	0.6	NAD	NAD
Location: Exterior - Sidewalk Caulk (M)								
55	020-02	020	0.198	35.1	64.4	0.6	NAD	NAD
Location: Exterior - Sidewalk Caulk (M)								
56	021-01	021	0.189	16.5	29.3	54.2	NAD	NAD
Location: Exterior - Foundation Sealer (M)								
57	021-02	021	0.169	10.8	30.7	58.5	NAD	NAD
Location: Exterior - Foundation Sealer (M)								

Analyzed by: Marwan A. Alahiri
Date: 4/15/2025



Reviewed by: Marwan A. Alahiri



**Quantitative Analysis (Semi/Full); Bulk Asbestos Analysis - PLM by Appd E to Subpt E, 40 CFR 763 or NYSDOH ELAP 198.1 for New York friable samples or NYSDOH ELAP 198.6 for New York NOB samples; TEM (Semi/Full) by EPA 600/R-93/116 (or NYSDOH ELAP 198.4; for New York samples). Analysis using Hitachi, Model H600-Noran 7 System, Microscope, Serial #: 600-27-6. NAD = no asbestos detected during a quantitative analysis; NA = not analyzed; Trace = <1%; (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only; Qualitative Analysis: Asbestos analysis results of "Present" or "NVA = No Visible Asbestos" represents results for Qualitative PLM or TEM Analysis only (no accreditation coverage available from any regulatory agency for qualitative analyses): NVLAP (PLM) 200546-0, NYSDOH ELAP Lab 11480, NJ Lab ID #NY031.

Warning Note: PLM limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris for which PLM evaluation is recommended (i.e. soils and other heterogenous materials).

Ambient Environmental, Inc.
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#225041750

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

PROJECT INFORMATION

Client:	Project Name:	Project Street Address:	Client Contact:
Bell & Spina Architects	Inspection Yonkers Armory	127 N. Broadway	James Paolini
Project Number:	**Inspector:**	**Project Address City/State:**	**Collection Date:**
250204AA	Peter Minotti & Kevin Jones	Yonkers, NY 10701	4/7/2025 – 4/8/2025
Sample TAT:	**Building Name:**	**Sampling Areas:**	**Comments: (Field)**
5 Day	Yonkers Armory	Interior & Exterior	X Analyze to First Positive By Homogeneous Material X For Negative NOB PLM's, continue to TEM

BULK SAMPLE LOCATION — TYPE OF MATERIALS

Homogeneous Area Number	Bulk Sample ID Number	Sampled Material (T, S, M)	Sample Location	Friability (N/F)	Condition (G, D, SD)	Quantity (LF, SF, EA)	Homogeneous Areas	Asbestos Content (Type & %)
001	01	Foil Faced Duct Insulation (T)	Upper Level – Conference Room 111	N	G			
001	02	Foil Faced Duct Insulation (T)	Upper Level – Conference Room 111	N	G			
001	03	Foil Faced Duct Insulation (T)	Upper Level – Conference Room 111	N	G			
002	01	Gray Duct Sealer (M)	Upper Level – Room 118	N	G			
002	02	Gray Duct Sealer (M)	Upper Level – Room 118	N	G			
003	01	Foil Backed Heating Pipe Insulation (T)	Upper Level – Room 116	N	G			
003	02	Foil Backed Heating Pipe Insulation (T)	Upper Level – Room 116	N	G			
003	03	Foil Backed Heating Pipe Insulation (T)	Upper Level – Room 116	N	G			
004	01	White Pipe Insulation Mastic (M)	Upper Level – Conference Room 111	N	G			
004	02	White Pipe Insulation Mastic (M)	Upper Level – Conference Room 111	N	G			
005	01	CMU Wall (M)	Upper Level – Corridor	F	G			
005	02	CMU Wall (M)	Upper Level – Corridor	F	G			
006	01	Red Epoxy Floor (S)	Upper Level – Women's Latrine Room 134	F	G			
006	02	Red Epoxy Floor (S)	Upper Level – Women's Latrine Room 134	F	G			

CHAIN OF CUSTODY

Relinquished By:	Date	Time	Received By:	Date	Time
I	4/8/25	15:00		4/9/25	11:11
II					

LAB INFORMATION

Lab Name	Date	Time
a. Analyzed By	4/15/25	6:17
b. QC by:		

Project Manager: C.D.	Results To: Results@ambient-env.com	Drawings: ___ Sample Locations ___ Material Locations	Comments:

(T=TSI; S=Surfacing; M=Misc)

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Comprehensive Building Science Solutions
NYS Certified WBE,
SBA EDWOSB & DBE

#250417 50

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

PROJECT INFORMATION

Client: Bell & Spina Architects	**Project Name:** Inspection Yonkers Armory	**Project Street Address:** 127 N. Broadway	**Client Contact:** James Paolini
Project Number: 250204AA	**Inspector:** Peter Minotti & Kevin Jones	**Project Address City/State:** Yonkers, NY 10701	**Collection Date:** 4/7/2025 – 4/8/2025
Sample TAT: 5 Day	**Building Name:** Yonkers Armory	**Sampling Areas:** Interior & Exterior	**Comments: (Field)** X Analyze to First Positive By Homogeneous Material; X For Negative NOB PLM's, continue to TEM

BULK SAMPLE LOCATION — TYPE OF MATERIALS

Homogeneous Area Number	Bulk Sample ID Number	Sampled Material (T, S, M)	Sample Location	Friability (N/F)	Condition (G, D, SD)	Quantity (LF, SF, EA)	Homogeneous Areas	Asbestos Content (Type & %)
006	03	Red Epoxy Floor (S)	Upper Level – Women's Latrine Room 134	F	G			
007	01	White Expansion Joint Caulk (M)	Upper Level – Room 127	N	G			
007	02	White Expansion Joint Caulk (M)	Upper Level – Room 127	N	G			
008	01	White Caulk on Window Frame to CMU Wall (M)	Upper Level – Room 127	N	G			
008	02	White Caulk on Window Frame to CMU Wall (M)	Upper Level – Room 127	N	G			
009	01	Black Window Glazing (M)	Upper Level – Room 127	N	G			
009	02	Black Window Glazing (M)	Upper Level – Room 127	N	G			
010	01	Beige Wall Paint (S)	Upper Level – Room 127	N	G			
010	02	Beige Wall Paint (S)	Upper Level – Room 116	N	G			
010	03	Beige Wall Paint (S)	Upper Level – Room 116	N	G			
010	04	Beige Wall Paint (S)	Upper Level – Room 111	N	G			
010	05	Beige Wall Paint (S)	Upper Level – Room 111	N	G			
011	01	Gray Floor Paint (S)	Upper Level – Room 133	N	G			
011	02	Gray Floor Paint (S)	Upper Level – Room 133	N	G			

CHAIN OF CUSTODY

Relinquished By:	Date	Time	Received By:	Date	Time
I	4/8/25	15:00		4/9/25	11:11
II					

LAB INFORMATION

Lab Name	Date	Time
a. Analyzed By:	4/15/25	6:18
b. QC by:		

Project Manager: C.D.	**Results To:** Results@ambient-env.com	**Drawings:** ___ Sample Locations ___ Material Locations

Comments:

(T=TSI; S=Surfacing; M=Misc)

Ambient Environmental, Inc.
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SBA EDWOSB & DBE

#250417 50

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

PROJECT INFORMATION

Client:	Project Name:	Project Street Address:	Client Contact:
Bell & Spina Architects	Inspection Yonkers Armory	127 N. Broadway	James Paolini
Project Number:	**Inspector:**	**Project Address City/State:**	**Collection Date:**
250204AA	Peter Minotti & Kevin Jones	Yonkers, NY 10701	4/7/2025 – 4/8/2025
Sample TAT:	**Building Name:**	**Sampling Areas:**	**Comments: (Field)**
5 Day	Yonkers Armory	Interior & Exterior	X Analyze to First Positive By Homogeneous Material X For Negative NOB PLM's, continue to TEM

BULK SAMPLE LOCATION — TYPE OF MATERIALS

Homogeneous Area Number	Bulk Sample ID Number	Sampled Material (T, S, M)	Sample Location	Friability (N/F)	Condition (G, D, SD)	Quantity (LF, SF, EA)	Homogeneous Areas	Asbestos Content (Type & %)
011	03	Gray Floor Paint (S)	Upper Level – Room 133	N	G			
012	01	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G			
012	02	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G			
012	03	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G			
012	04	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G			
012	05	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G			
012	06	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G			
012	07	Off-White Wall Paint (S)	Lower Level – Assembly Hall 5	N	G			
013	01	Yellow Wall Paint (S)	Lower Level – Assembly Hall 5	N	G			
013	02	Yellow Wall Paint (S)	Lower Level – Assembly Hall 5	N	G			
013	03	Yellow Wall Paint (S)	Lower Level – Assembly Hall 5	N	G			
013	04	Yellow Wall Paint (S)	Lower Level – Assembly Hall 5	N	G			
013	05	Yellow Wall Paint (S)	Lower Level – Assembly Hall 5	N	G			
014	01	Black Electrical Wire Insulation (M)	Lower Level – Mechanical Room 1	N	G			

CHAIN OF CUSTODY

Relinquished By:	Date	Time	Received By:	Date	Time
I Rob Minotti	4/8/25	15:00	[illegible]	4/9/25	11:11
II					

LAB INFORMATION

Lab Name	Date	Time
a. Analyzed By: Meenu Mahi	4/15/25	6:18
b. QC by:		

Project Manager: C.D.	Results To: Results@ambient-env.com	Drawings: ___ Sample Locations ___ Material Locations

Comments:

(T=TSI; S=Surfacing; M=Misc)

Ambient Environmental, Inc.
Comprehensive Building Science Solutions
NYS Certified WBE,
SBA EDWOSB & DBE

 #250417-00

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

PROJECT INFORMATION

Client: **Bell & Spina Architects**	Project Name: **Inspection Yonkers Armory**	Project Street Address: **127 N. Broadway**	Client Contact: **James Paolini**
Project Number: **250204AA**	Inspector: **Peter Minotti & Kevin Jones**	Project Address City/State: **Yonkers, NY 10701**	Collection Date: **4/7/2025 – 4/8/2025**
Sample TAT: **5 Day**	Building Name: **Yonkers Armory**	Sampling Areas: **Interior & Exterior**	Comments: (Field) X Analyze to First Positive By Homogeneous Material X For Negative NOB PLM's, continue to TEM

BULK SAMPLE LOCATION / TYPE OF MATERIALS

Homogeneous Area Number	Bulk Sample ID Number	Sampled Material (T, S, M)	Sample Location	Friability (N/F)	Condition (G, D, SD)	Quantity (LF, SF, EA)	Homogeneous Areas	Asbestos Content (Type & %)
014	02	Black Electrical Wire Insulation (M)	Lower Level – Mechanical Room 1	N	G			
015	01	White Electrical Wire Insulation (M)	Lower Level – Mechanical Room 1	N	G			
015	02	White Electrical Wire Insulation (M)	Lower Level – Mechanical Room 1	N	G			
016	01	Brick Wall (M)	Exterior	F	G			
016	02	Brick Wall (M)	Exterior	F	G			
017	01	Tan Adhesive on Stair Tread (M)	Exterior	N	G			
017	02	Tan Adhesive on Stair Tread (M)	Exterior	N	G			
018	01	Tan Concrete Step (M)	Exterior	F	G			
018	02	Tan Concrete Step (M)	Exterior	F	G			
019	01	Concrete Sidewalk (M)	Exterior	F	G			
019	02	Concrete Sidewalk (M)	Exterior	F	G			
020	01	Sidewalk Caulk (M)	Exterior	N	G			
020	02	Sidewalk Caulk (M)	Exterior	N	G			
021	01	Foundation Sealer (M)	Exterior	N	G			

CHAIN OF CUSTODY

Relinquished By:	Date	Time	Received By:	Date	Time
I	4/8/25	15:00		4/9/25	11:11
II					

LAB INFORMATION

Lab Name	Date	Time
a. Analyzed By:	4/15/25	6:18
b. QC by:		

Project Manager: **C.D.**	Results To: **Results@ambient-env.com**	Drawings: ___ Sample Locations ___ Material Locations	Comments:

(T=TSI; S=Surfacing; M=Misc)

Ambient Environmental, Inc.
Comprehensive Building Science Solutions
NYS Certified WBE,
SBA EDWOSB & DBE

#250417CD

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

PROJECT INFORMATION

Client: **Bell & Spina Architects**	Project Name: **Inspection Yonkers Armory**	Project Street Address: **127 N. Broadway**	Client Contact: **James Paolini**
Project Number: **250204AA**	Inspector: **Peter Minotti & Kevin Jones**	Project Address City/State: **Yonkers, NY 10701**	Collection Date: **4/7/2025 – 4/8/2025**
Sample TAT: **5 Day**	Building Name: **Yonkers Armory**	Sampling Areas: **Interior & Exterior**	Comments: (Field) X Analyze to First Positive By Homogeneous Material X For Negative NOB PLM's, continue to TEM

BULK SAMPLE LOCATION — TYPE OF MATERIALS

Homogeneous Area Number	Bulk Sample ID Number	Sampled Material (T, S, M)	Sample Location	Friability (N/F)	Condition (G, D, SD)	Quantity (LF, SF, EA)	Homogeneous Areas	Asbestos Content (Type & %)
021	02	Foundation Sealer (M)	Exterior	N	G			

CHAIN OF CUSTODY

Relinquished By:	Date	Time	Received By:	Date	Time
I	4/8/25	15:00		4/9/25	11:41
II					

Project Manager: **C.D.**	Results To: **Results@ambient-env.com**	Drawings: ___ Sample Locations ___ Material Locations

(T=TSI; S=Surfacing; M=Misc)

LAB INFORMATION

Lab Name	Date	Time
a. Analyzed By:	4/15/25	6:18
b. QC by:		

Comments:

ATTACHMENT B
LEAD-BASED PAINT TESTING RESULTS

Ambient Environmental, Inc.
Building Science and EHS Solutions
NYS Certified WBE,
SBA EDWOSB & DBE

Lead Based Paint Inspection Detailed Report

828 Washington Avenue
Albany, New York

INSPECTION SITE:	Yonkers Armory 2 Quincy Place Yonkers, New York
INSPECTION DATE:	4/7/2025 - 4/7/2025
REPORT NUMBER:	250204AA
INSTRUMENT TYPE:	Viken Detection Pb200i XRF Lead Paint Analyzer 2327
ACTION LEVEL:	1.0 (mg/cm²)
Job ID:	250204AA

STATEMENT: Paint conditions included in this report represent conditions observed by the inspector at the time of the inspection

Lead Based Paint Inspection Detailed Report

Inspection Date:	4/7/2025 - 4/7/2025	Inspection Site:	Yonkers Armory 2 Quincy Place Yonkers, New York
Action Level:	1.0 (mg/cm²)		
Report Number:	250204AA		
Total Readings:	62		
Unit Started:	04/07/2025 17:02:47		
Unit Ended:	04/07/2025 18:50:47		

Read #	Result	-->RoomChoice	Structure	-->Member	Substrate	Wall	Location	Color	Lead (mg/cm²)	Mode
7	Negative	1	Room	Wall	Concrete	A	1	Beige	0.3 mg/cm²	Action Level
8	Negative	1	Room	Wall	Concrete	A	2	Yellow	0.4 mg/cm²	Action Level
9	Negative	1	Door		Metal	A	1	Green	0.2 mg/cm²	Action Level
10	Negative	1	Door	Frame	Metal	A	1	Black	0.7 mg/cm²	Action Level
11	Negative	1	Door	Frame	Metal	B	1	Black	0.7 mg/cm²	Action Level
12	Negative	1	Door		Metal	B	1	Green	0.2 mg/cm²	Action Level
13	Negative	1	Room	Wall	Concrete	B	1	Beige	0.1 mg/cm²	Action Level
14	Negative	1	Room	Wall	Concrete	B	2	Yellow	0.2 mg/cm²	Action Level
15	Negative	1	Room	Wall	Concrete	C	1	Beige	0.0 mg/cm²	Action Level
16	Negative	1	Room	Wall	Concrete	C	2	Yellow	0.2 mg/cm²	Action Level
17	Negative	1	Door		Metal	C	1	Gray	0.2 mg/cm²	Action Level
18	Negative	1	Door	Frame	Metal	C	1	Black	0.4 mg/cm²	Action Level
19	Negative	1	Room	Wall	Concrete	C	1	Beige	0.2 mg/cm²	Action Level
20	Negative	1	Room	Wall	Concrete	C	2	Yellow	0.1 mg/cm²	Action Level
21	Negative	1	Room	Wall	Concrete	D	1	Beige	0.1 mg/cm²	Action Level
22	Negative	1	Room	Wall	Concrete	D	2	Yellow	0.3 mg/cm²	Action Level
23	Negative	1	Door		Metal	D	1	Green	0.1 mg/cm²	Action Level
24	Negative	1	Door	Frame	Metal	D	1	Black	0.6 mg/cm²	Action Level

Lead Based Paint Inspection Detailed Report

Inspection Date: 4/7/2025 - 4/7/2025
Action Level: 1.0 (mg/cm²)
Report Number: 250204AA
Total Readings: 62
Unit Started: 04/07/2025 17:02:47
Unit Ended: 04/07/2025 18:50:47

Inspection Site: Yonkers Armory
2 Quincy Place
Yonkers, New York

Read #	Result	-->RoomChoice	Structure	-->Member	Substrate	Wall	Location	Color	Lead (mg/cm²)	Mode
25	Negative	2	Room	Wall	Concrete	A	1	Beige	0.4 mg/cm²	Action Level
26	Negative	2	Room	Wall	Concrete	A	2	Yellow	0.1 mg/cm²	Action Level
27	Negative	2	Room	Wall	Concrete	C	1	Beige	0.3 mg/cm²	Action Level
28	Negative	2	Room	Wall	Concrete	C	2	Yellow	0.2 mg/cm²	Action Level
29	Negative	2	Door		Metal	D	1	Red	0.2 mg/cm²	Action Level
30	Negative	2	Door	Frame	Metal	D	1	Black	0.6 mg/cm²	Action Level
31	Negative	3	Room	Wall	Concrete	A	1	Beige	0.5 mg/cm²	Action Level
32	Negative	3	Room	Wall	Concrete	B	1	Beige	0.1 mg/cm²	Action Level
33	Negative	3	Room	Wall	Concrete	C	1	Beige	0.1 mg/cm²	Action Level
34	Negative	3	Room	Wall	Concrete	D	1	Beige	0.0 mg/cm²	Action Level
35	Negative	4	Room	Wall	Concrete	A	1	Beige	0.2 mg/cm²	Action Level
36	Negative	4	Room	Wall	Concrete	B	1	Beige	0.1 mg/cm²	Action Level
37	Negative	4	Room	Wall	Concrete	C	1	Beige	0.2 mg/cm²	Action Level
38	Negative	4	Room	Wall	Concrete	D	1	Beige	0.2 mg/cm²	Action Level
39	Negative	4	Door		Metal	D	1	Red	0.1 mg/cm²	Action Level
40	Negative	4	Door	Frame	Metal	D	1	Black	0.6 mg/cm²	Action Level
41	Negative	4	Room	Ceiling	Drywall	D	1	White	0.1 mg/cm²	Action Level
42	Negative	4	Room	Floor	Concrete	D	1	Gray	0.4 mg/cm²	Action Level

Lead Based Paint Inspection Detailed Report

Inspection Date:	4/7/2025 - 4/7/2025	Inspection Site:	Yonkers Armory 2 Quincy Place Yonkers, New York
Action Level:	1.0 (mg/cm²)		
Report Number:	250204AA		
Total Readings:	62		
Unit Started:	04/07/2025 17:02:47		
Unit Ended:	04/07/2025 18:50:47		

Read #	Result	-->RoomChoice	Structure	-->Member	Substrate	Wall	Location	Color	Lead (mg/cm²)	Mode
43	Negative	5	Room	Floor	Concrete	A	1	Tan	0.4 mg/cm²	Action Level
44	Positive	5	Room	Wall	Ceramic	A	1	White	1.8 mg/cm²	Action Level
45	Positive	5	Room	Wall	Ceramic	B	1	White	2.0 mg/cm²	Action Level
46	Positive	5	Room	Wall	Ceramic	C	1	White	1.9 mg/cm²	Action Level
47	Positive	5	Room	Wall	Ceramic	D	1	White	1.9 mg/cm²	Action Level
48	Negative	5	Room	Ceiling	Drywall	D	1	Tan	0.1 mg/cm²	Action Level
49	Negative	6	Room	Wall	Concrete	A	1	Beige	0.3 mg/cm²	Action Level
50	Negative	6	Room	Wall	Concrete	B	1	Beige	0.3 mg/cm²	Action Level
51	Negative	6	Room	Wall	Concrete	C	1	Beige	0.3 mg/cm²	Action Level
52	Negative	6	Room	Wall	Concrete	D	1	Beige	0.2 mg/cm²	Action Level
53	Negative	6	Room	Floor	Concrete	D	1	Tan	0.5 mg/cm²	Action Level
54	Negative	6	Room	Ceiling	Drywall	D	1	Beige	0.1 mg/cm²	Action Level
55	Negative	6	Bar Joist		Metal	A	1	Red	0.1 mg/cm²	Action Level
56	Negative	7	Room	Wall	Concrete	A	1	Beige	0.3 mg/cm²	Action Level
57	Negative	7	Room	Wall	Concrete	B	1	Beige	0.4 mg/cm²	Action Level
58	Negative	7	Room	Wall	Concrete	C	1	Beige	0.2 mg/cm²	Action Level
59	Negative	7	Room	Wall	Concrete	D	1	Beige	0.2 mg/cm²	Action Level
60	Negative	8 Exterior	Door		Metal	A	1	Green	0.1 mg/cm²	Action Level

Lead Based Paint Inspection Detailed Report

Inspection Date: 4/7/2025 - 4/7/2025
Action Level: 1.0 (mg/cm²)
Report Number: 250204AA
Total Readings: 62
Unit Started: 04/07/2025 17:02:47
Unit Ended: 04/07/2025 18:50:47

Inspection Site: Yonkers Armory
2 Quincy Place
Yonkers, New York

Read #	Result	-->RoomChoice	Structure	-->Member	Substrate	Wall	Location	Color	Lead (mg/cm²)	Mode
61	Negative	8 Exterior	Door	Frame	Metal	A	1	Green	0.1 mg/cm²	Action Level
62	Negative	8 Exterior	Window	Sash	Metal	A	1	Green	0.2 mg/cm²	Action Level
63	Negative	8 Exterior	Door		Metal	B	1	Green	0.1 mg/cm²	Action Level
64	Negative	8 Exterior	Door	Frame	Metal	B	1	Green	0.2 mg/cm²	Action Level
65	Negative	8 Exterior	Door	Frame	Metal	C	1	Green	0.6 mg/cm²	Action Level
66	Negative	8 Exterior	Door	---	Metal	C	1	Gray	0.1 mg/cm²	Action Level
67	Negative	8 Exterior	Door	---	Metal	C	2	Green	0.2 mg/cm²	Action Level
68	Negative	8 Exterior	Door	Frame	Metal	C	2	Green	0.5 mg/cm²	Action Level

------ END OF READINGS ------

ATTACHMENT C

PCB RESULTS AND LABORATORY ANALYSIS REPORT WITH CHAIN OF CUSTODY DOCUMENTATION

BELL & SPINA ARCHITECTS
YONKERS ARMORY
127 N BROADWAY, YONKERS, NY 10701
SUMMARY OF PCB SAMPLES AND ANALYSIS RESULTS

Material Description	Sample Number	Total PCB (PPM)	Sample Location
White Expansion Joint Caulk -	PCB-01	<.729	Room 127
White Caulk	PCB-02	<1.390	Window Frame to CMU Wall - Room 127
Black Window Glazing	PCB-03	<10.900	Room 127
Gray Sidewalk Caulk	PCB-04	<.477	Exterior

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: Ambient Environmentals LLC. (3639)
Address: 828 Washington Ave
Albany, NY 12203-1622

Attn:

Project: Inspection Yonkers Armory
Location: 127 N. Broadway Yonkers, NY
Number: 250204AA

Order #: 615306

Matrix Bulk
Received 04/09/25
Reported 04/14/25

PO Number:

Sample ID / Parameter	Cust. Sample ID / Method	Result	RL*	Units	Analysis Date	Analyst
615306-001	PCB-01 — White Exp Joint Caulk					
Semi-volatile Organic Compounds						
Aroclor - 1016	SW846 8082A / 3550C	**<663**	663	µg/kg	04/11/25	KM
Aroclor - 1221	SW846 8082A / 3550C	**<663**	663	µg/kg	04/11/25	KM
Aroclor - 1232	SW846 8082A / 3550C	**<663**	663	µg/kg	04/11/25	KM
Aroclor - 1242	SW846 8082A / 3550C	**<663**	663	µg/kg	04/11/25	KM
Aroclor - 1248	SW846 8082A / 3550C	**<663**	663	µg/kg	04/11/25	KM
Aroclor - 1254	SW846 8082A / 3550C	**<729**	729	µg/kg	04/11/25	KM
Aroclor - 1260	SW846 8082A / 3550C	**<663**	663	µg/kg	04/11/25	KM
Aroclor - 1262	SW846 8082A / 3550C	**<663**	663	µg/kg	04/11/25	KM
Aroclor - 1268	SW846 8082A / 3550C	**<663**	663	µg/kg	04/11/25	KM
615306-002	PCB-02 — White Caulk Window Frame					
Semi-volatile Organic Compounds						
Aroclor - 1016	SW846 8082A / 3550C	**<1260**	1260	µg/kg	04/11/25	KM
Aroclor - 1221	SW846 8082A / 3550C	**<1260**	1260	µg/kg	04/11/25	KM
Aroclor - 1232	SW846 8082A / 3550C	**<1260**	1260	µg/kg	04/11/25	KM
Aroclor - 1242	SW846 8082A / 3550C	**<1260**	1260	µg/kg	04/11/25	KM
Aroclor - 1248	SW846 8082A / 3550C	**<1260**	1260	µg/kg	04/11/25	KM
Aroclor - 1254	SW846 8082A / 3550C	**<1390**	1380	µg/kg	04/11/25	KM
Aroclor - 1260	SW846 8082A / 3550C	**<1260**	1260	µg/kg	04/11/25	KM
Aroclor - 1262	SW846 8082A / 3550C	**<1260**	1260	µg/kg	04/11/25	KM
Aroclor - 1268	SW846 8082A / 3550C	**<1260**	1260	µg/kg	04/11/25	KM
615306-003	PCB-03 — Black Window Glazing					
Semi-volatile Organic Compounds						
Aroclor - 1016	SW846 8082A / 3550C	**<9850**	9850	µg/kg	04/11/25	KM
Aroclor - 1221	SW846 8082A / 3550C	**<9850**	9850	µg/kg	04/11/25	KM
Aroclor - 1232	SW846 8082A / 3550C	**<9850**	9850	µg/kg	04/11/25	KM
Aroclor - 1242	SW846 8082A / 3550C	**<9850**	9850	µg/kg	04/11/25	KM

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results apply to the sample as received.

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: Ambient Environmentals LLC. (3639)
Address: 828 Washington Ave
Albany, NY 12203-1622

Attn:

Project: Inspection Yonkers Armory
Location: 127 N. Broadway Yonkers, NY
Number: 250204AA

Order #: 615306

Matrix Bulk
Received 04/09/25
Reported 04/14/25

PO Number:

Sample ID / Parameter	Cust. Sample ID / Method	Location / Result	RL*	Units	Analysis Date	Analyst
615306-003	PCB-03	Black Window Glazing				
Aroclor - 1248	SW846 8082A / 3550C	**<9850**	9850	µg/kg	04/11/25	KM
Aroclor - 1254	SW846 8082A / 3550C	**<10900**	10800	µg/kg	04/11/25	KM
Aroclor - 1260	SW846 8082A / 3550C	**<9850**	9850	µg/kg	04/11/25	KM
Aroclor - 1262	SW846 8082A / 3550C	**<9850**	9850	µg/kg	04/11/25	KM
Aroclor - 1268	SW846 8082A / 3550C	**<9850**	9850	µg/kg	04/11/25	KM
615306-004	PCB-04	Gray Sidewalk Caulk				
Semi-volatile Organic Compounds						
Aroclor - 1016	SW846 8082A / 3550C	**<434**	434	µg/kg	04/11/25	KM
Aroclor - 1221	SW846 8082A / 3550C	**<434**	434	µg/kg	04/11/25	KM
Aroclor - 1232	SW846 8082A / 3550C	**<434**	434	µg/kg	04/11/25	KM
Aroclor - 1242	SW846 8082A / 3550C	**<434**	434	µg/kg	04/11/25	KM
Aroclor - 1248	SW846 8082A / 3550C	**<434**	434	µg/kg	04/11/25	KM
Aroclor - 1254	SW846 8082A / 3550C	**<477**	477	µg/kg	04/11/25	KM
Aroclor - 1260	SW846 8082A / 3550C	**<434**	434	µg/kg	04/11/25	KM
Aroclor - 1262	SW846 8082A / 3550C	**<434**	434	µg/kg	04/11/25	KM
Aroclor - 1268	SW846 8082A / 3550C	**<434**	434	µg/kg	04/11/25	KM

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results apply to the sample as received.

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: Ambient Environmentals LLC. (3639)
Address: 828 Washington Ave
Albany, NY 12203-1622

Attn:

Project: Inspection Yonkers Armory
Location: 127 N. Broadway Yonkers, NY
Number: 250204AA

Order #: 615306

Matrix Bulk
Received 04/09/25
Reported 04/14/25

PO Number:

Sample ID / Parameter	Cust. Sample ID / Method	Result	RL*	Units	Analysis Date	Analyst

615306-04/14/25 03:23 PM

Kelly Muncy

Reviewed By: **Kelly Muncy**
Manager

Surrogate Recoveries

615306-001 - PCB	
DCB	84%
TCMX	153%
615306-002 - PCB	
DCB	136%
TCMX	MI
615306-003 - PCB	
DCB	MI
TCMX	MI
615306-004 - PCB	
DCB	98%
TCMX	125%

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results apply to the sample as received.

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: Ambient Environmentals LLC. (3639)
Address: 828 Washington Ave
Albany, NY 12203-1622

Attn:

Project: Inspection Yonkers Armory
Location: 127 N. Broadway Yonkers, NY
Number: 250204AA

Order #: 615306

Matrix Bulk
Received 04/09/25
Reported 04/14/25

PO Number:

Sample ID	Cust. Sample ID	Location					
Parameter		Method	Result	RL*	Units	Analysis Date	Analyst

State Certifications

Method	Parameter	New York	Virginia
SW846 8082A	Aroclor - 1016	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1221	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1232	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1242	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1248	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1254	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1260	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1262	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1268	ELAP Certified	VELAP Certified

State	Certificate Number
New York	ELAP 69247
Virginia	VELAP 12761

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results apply to the sample as received.

SCHNEIDER LABORATORIES GLOBAL, INC.
2512 West Cary Street, Richmond, Virginia 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475
www.slabinc.com • info@slabinc.com

615306

V:\615\615306

aelnasseh 4/9/2025 10:14:04 AM
Federal Express 818593510503

Submitting Co.	Ambient Environmental, Inc.	**State of Collection**	NY	**Cert. Required**	☐ YES ☐ NO
828 Washington Avenue		**Acct #**	3639	**Phone**	518-482-0704
Albany, New York 12203		**Email**	Results@ambient-env.com		
Project Name	Inspection Yonkers Armory	**PO #**			
Project Location	127 N. Broadway, Yonkers, NY 10701	**Special Instructions**			
Project Number	250204AA				
Collected By	Peter Minotti & Kevin Jones				

Turn Around Time **

- ☐ Same day *
- ☐ 1 business day
- ☐ 2 business days
- ☐ 3 business days
- ☒ 5 business days

* not available for all tests

** A job received past 3 PM will begin its TAT the next business day

Please schedule rush tests in advance

Matrix

- ☐ Paint
- ☒ Bulk
- ☐ Soil
- ☐ Wipe
- ☐ Ground Water
- ☐ Waste Water

Test selection for all Samples listed below (Circle desired method)

- ☐ VOC (8260/624) ☐ SVOC (8270/625)
- ☐ Pesticides (8081/608) ☐ Herbicides (8151)
- ☐ Chlordane (8081/608) ☐ Toxaphene (8081/608)
- ☒ PCB (8082) ☐ TPH-DRO (8015) ☐ TPH-GRO (8015)
- ☐ BTEX (8260/8021) ☐ MTBE (8260/8021) ☐ Naphthalene (8260/8270)

TCLP

- ☐ Volatiles
- ☐ Semi-Volatiles
- ☐ Herbicides
- ☐ Pesticides
- ☐ Full TCLP (10 Day)

Miscellaneous

- ☐ Chlorides (300/9056) ☐ Silica (7602)
- ☐ Sulfates (300/9056) ☐ PAH (8270/625)
- ☐ Oil and Grease (1664) ☐ TPH (EPA 418.1)

Individual Sample Requests

Sample #	Date Sampled	Time Sampled	# of Containers	Sample Identification	Wipe Area
PCB-01	4/7/2025			White Expansion Joint Caulk - Room 127	
PCB-02	4/7/2025			White Caulk Window Frame to CMU Wall - Room 127	
PCB-03	4/7/2025			Black Window Glazing - Room 127	
PCB-04	4/7/2025			Gray Sidewalk Caulk - Exterior	

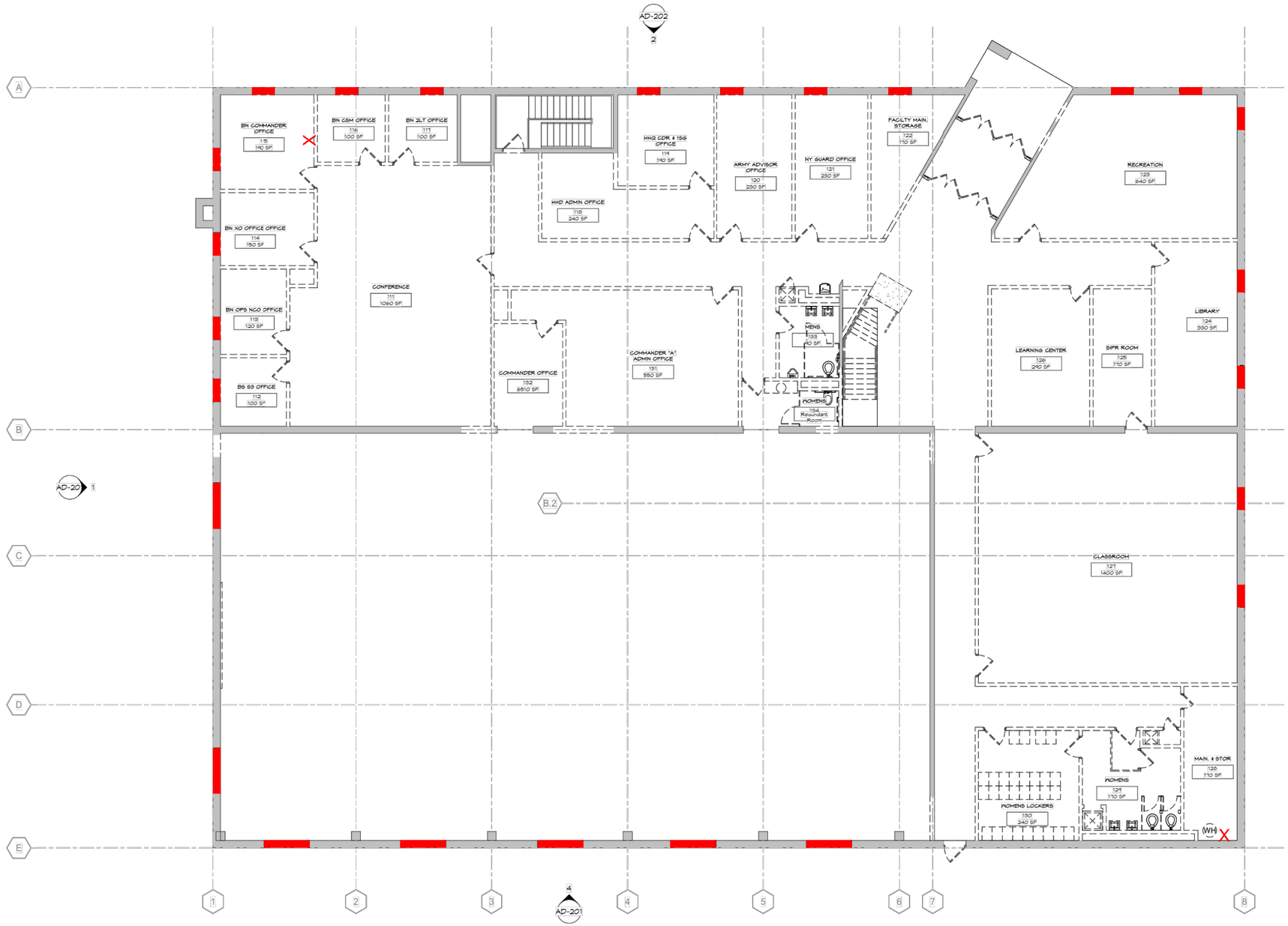
For Aqueous and Solid samples ensure enough sample is sent for duplicate and spike analyses

Relinquished By: Peter Minotti Signature: Peter Minotti Date/Time 4/8/25 15:00

! ALL SHADED FIELDS MUST BE FILLED TO AVOID DELAYS !

Chain-of-Custody documentation continued internally

ATTACHMENT D
HAZARDOUS MATERIAL LOCATION DRAWINGS



1 UPPER LEVEL REMOVALS PLAN

SCALE : 1/8" = 1'-0"

*PLEASE REFER TO THE ASSUMPTIONS AND LIMITATIONS SECTION OF REPORT

Ambient Environmental, Inc.
Building Science and EHS Solutions
828 Washington Avenue, Albany, NY 12203
PH: 518.482.0704 FAX:518.482.0750
www.ambient-env.com

LEGEND

- (009-01) BLACK WINDOW GLAZING
- X VERMICULITE PROBE LOCATION

REVISIONS

PROJECT LOCATION

NY NATIONAL GUARD ARMORY
2 QUINCY PLACE
YONKERS, NEW YORK

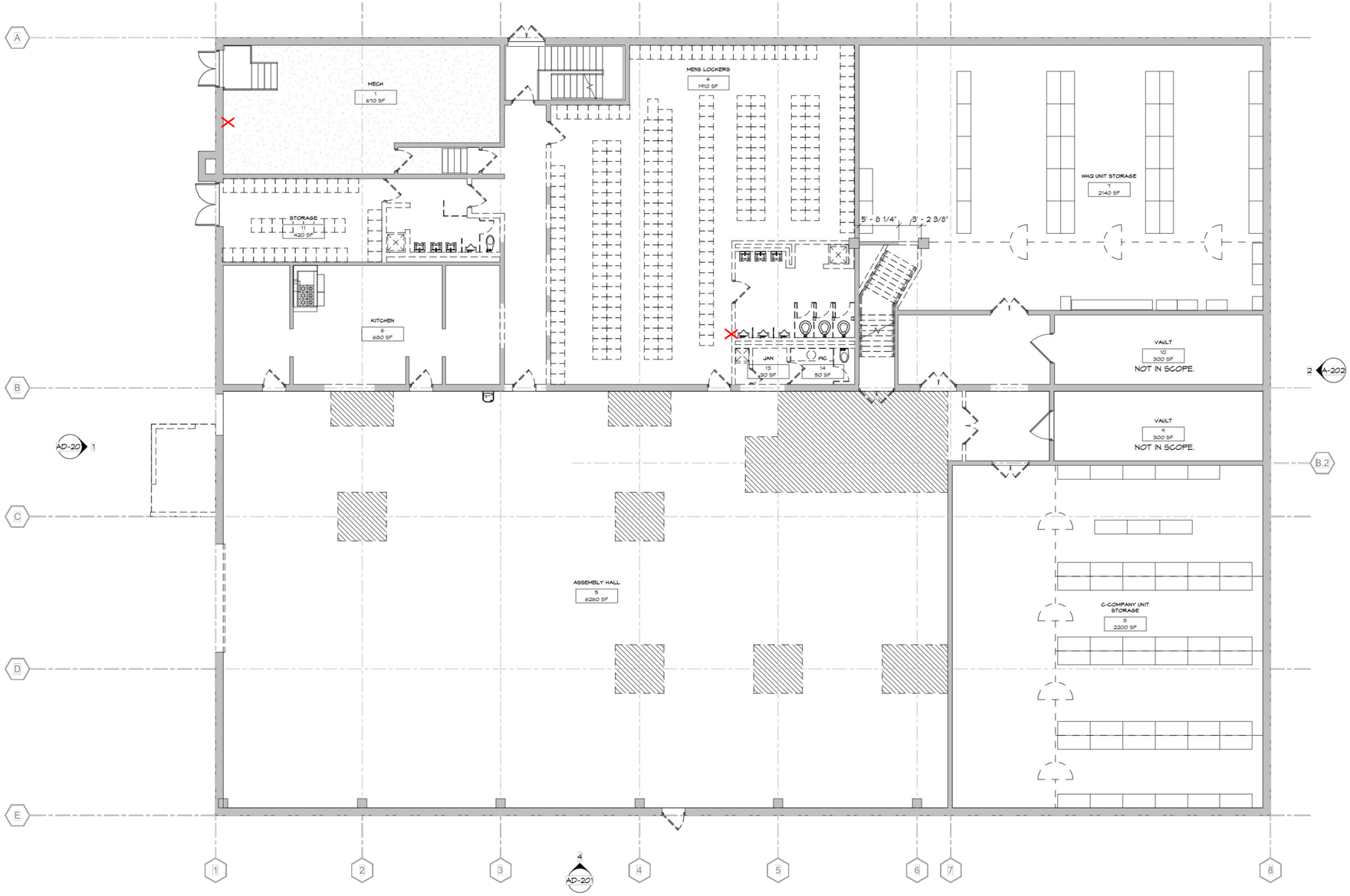
DRAWING TITLE

UPPER LEVEL MATERIALS LOCATION PLAN

DATE: 4/16/2025	SCALE: NTS
PROJECT NO.	250204AA
DRAWN BY	KAJ
CHECKED BY	CDW

DWG. NO.

ASB-200



1 LOWER LEVEL REMOVALS PLAN
SCALE : 1/8" = 1'-0"

*PLEASE REFER TO THE ASSUMPTIONS AND LIMITATIONS SECTION OF REPORT

Ambient Environmental, Inc.
Building Science and EHS Solutions
828 Washington Avenue, Albany, NY 12203
PH: 518.482.0704 FAX:518.482.0750
www.ambient-env.com

LEGEND

X VERMICULITE PROBE LOCATION

REVISIONS		

PROJECT LOCATION

NY NATIONAL GUARD
ARMORY
2 QUINCY PLACE
YONKERS, NEW YORK

DRAWING TITLE

LOWER LEVEL MATERIALS LOCATION PLAN

DATE: 4/16/2025	SCALE: NTS
PROJECT NO.	250204AA
DRAWN BY	KAJ
CHECKED BY	CDW

DWG. NO.
ASB-100

A

B

C

D



1 UPPER LEVEL REMOVALS PLAN

SCALE : 1/8" = 1'-0"

*PLEASE REFER TO THE ASSUMPTIONS AND LIMITATIONS SECTION OF REPORT

Ambient Environmental, Inc.
Building Science and EHS Solutions
828 Washington Avenue, Albany, NY 12203
PH: 518.482.0704 FAX:518.482.0750
www.ambient-env.com

LEGEND

X XRF ROOM NUMBER

X BUILDING SIDE

REVISIONS		

PROJECT LOCATION

NY NATIONAL GUARD ARMORY
2 QUINCY PLACE
YONKERS, NEW YORK

DRAWING TITLE

UPPER LEVEL LEAD BASED PAINT ROOM LOCATION PLAN

DATE: 4/16/2025	SCALE: NTS
PROJECT NO.	250204AA
DRAWN BY	KAJ
CHECKED BY	CDW

DWG. NO.

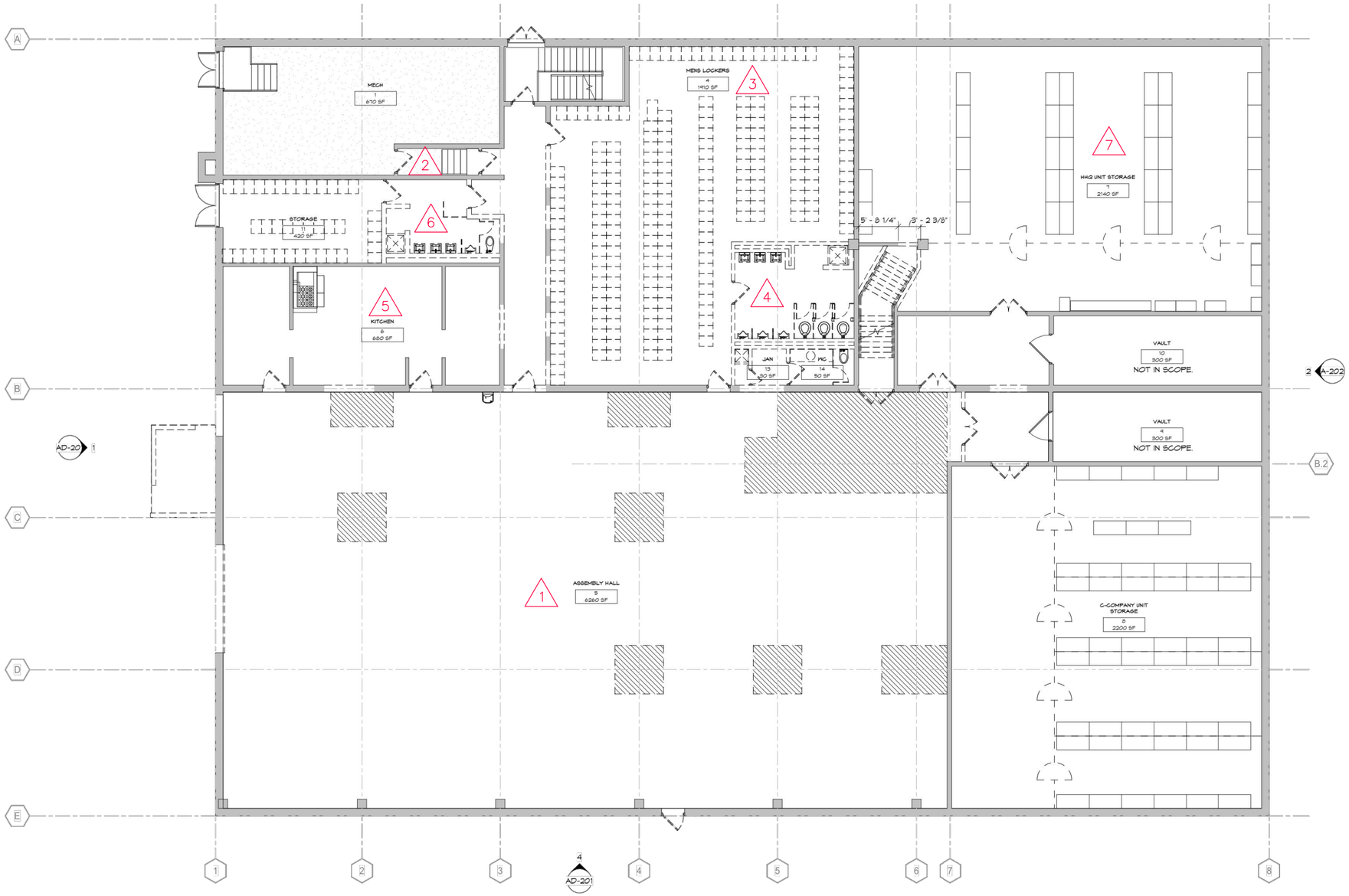
PB-200

A

B

C

D



1 LOWER LEVEL REMOVALS PLAN
SCALE : 1/8" = 1'-0"

*PLEASE REFER TO THE ASSUMPTIONS AND LIMITATIONS SECTION OF REPORT

Ambient Environmental, Inc.
Building Science and EHS Solutions
828 Washington Avenue, Albany, NY 12203
PH: 518.482.0704 FAX:518.482.0750
www.ambient-env.com

LEGEND

X XRF ROOM NUMBER

X BUILDING SIDE

REVISIONS		

PROJECT LOCATION

NY NATIONAL GUARD
ARMORY
2 QUINCY PLACE
YONKERS, NEW YORK

DRAWING TITLE

LOWER LEVEL LEAD BASED PAINT ROOM LOCATION PLAN

DATE: 4/16/2025	SCALE: NTS
PROJECT NO.	250204AA
DRAWN BY	KAJ
CHECKED BY	CDW

DWG. NO.

PB-100

ATTACHMENT E
PHOTOGRAPHIC DOCUMENTATION

Ambient Environmental, Inc.
Building Science and EHS Solutions
NYS Certified WBE,
SBA EDWOSB & DBE

PHOTO LOG

Ambient Project #250204AA
Hazmat Inspection
NY National Guard Armory
2 Quincy Place, Yonkers, NY
December 27, 2019



Photograph 1 – 009-01 Black Window Glazing

ATTACHMENT F

COMPANY, INSPECTOR AND LABORATORY ACCREDITATION AND LICENSES

WE ARE YOUR DOL

NEW YORK STATE | Department of Labor

DIVISION OF SAFETY & HEALTH LICENSE AND CERTIFICATE UNIT, STATE OFFICE CAMPUS, BLDG. 12, ALBANY, NY 12226

ASBESTOS HANDLING LICENSE

Ambient Environmental, Inc.
828 Washington Avenue, Albany, NY, 12203

License Number: 29608
License Class: RESTRICTED
Date of Issue: 06/17/2024
Expiration Date: 07/31/2025
Duly Authorized Representative: Joella Viscusi

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.



Amy Phillips, Director
For the Commissioner of Labor

United States Environmental Protection Agency

This is to certify that

Ambient Environmental, Inc.

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires May 12, 2026

LBP-16658-3

Certification #

December 12, 2022

Issued On

Michelle Price, Chief

Lead, Heavy Metals, and Inorganics Branch

NEW YORK STATE

MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISE ("MWBE")

CERTIFICATION

Empire State Development's Division of Minority and Women's Business Development grants a

Women Business Enterprise (WBE)

pursuant to New York State Executive Law, Article 15-A to:

Ambient Environmental, Inc.

Certification Awarded on: January 30, 2020
Expiration Date: January 30, 2025
File ID#: 50943

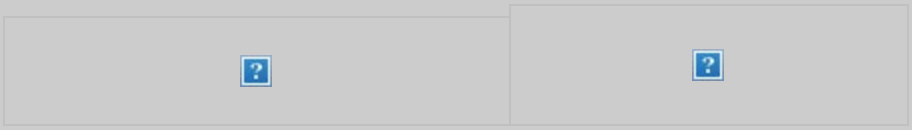
NEW YORK STATE OF OPPORTUNITY. Division of Minority and Women's Business Development

A Division of Empire State Development

From: Joella Viscusi
To: Michelle Bissonette
Cc: Christina Agans
Subject: RE: NYS: Application Review In Process
Date: Friday, January 10, 2025 9:32:33 AM
Attachments: image002.jpg
image003.jpg
image004.jpg

Thank you Michelle, please print this out and keep it in case we need to send to clients to prove we are still certified while we wait. Thank you.

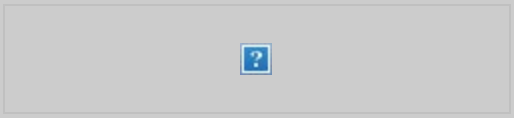
Joella Viscusi
President
828 Washington Ave.
Albany, NY 12203
Ph. 518-482-0704 | Cell 518-859-5924
joellav@ambient-env.com



From: Michelle Bissonette <michelleb@ambient-env.com>
Sent: Friday, January 10, 2025 9:10 AM
To: New York State Contract System <ny@newnycontracts.com>
Subject: RE: NYS: Application Review In Process

Good morning;
Thank you so very much for the clarification. Have a great rest of your day.

Michelle



Michelle Bissonette
Finance Director
Ambient Environmental, Inc
828 Washington Avenue
Albany, NY 12203
518.482.0704
michelleb@ambient-env.com

www.ambient-env.com

From: New York State Contract System <ny@newnycontracts.com>
Sent: Friday, January 10, 2025 9:09 AM
To: Michelle Bissonette <michelleb@ambient-env.com>
Subject: RE: NYS: Application Review In Process



RE: NYS: Application Review In Process

Good morning,

Your recertification application is under review with an analyst. Your certification will remain in effect.

Thank you for contacting us,
Olga Candelaria

> Good afternoon;
> I do have one question relating to the review
> process timing and the expiration of our WBE
> Certification.
> Is our certification still in effect during the
> review process time period, if that time is beyond
> 1/30/2025 (our certification expiration date)?
>
> Thank you
>
> Michelle
>
> [AmbientLogo2018]
>
>
> Michelle Bissonette
> Finance Director
> Ambient Environmental, Inc
> 828 Washington Avenue
> Albany, NY 12203
> 518.482.0704
> michelleb@ambient-env.com
> www.ambient-env.com
>
>
> From: New York State Contract System
>
> Sent: Monday, January 6, 2025 10:47 AM

> To: Michelle Bissonette
>
> Subject: NYS: Application Review In Process
>
> [Image removed by
> sender.]
> Certification Application Review In Process
>
> Applicant: Ambient Environmental, Inc.
> Certifying Agency: New York State
> Application Type: Recertification Application
> (NEW)
> Application Number: 4247524
> Contact: Michelle Bissonette
> Date Submitted: 1/3/2025
> Date Received: 1/6/2025
>
> Dear Michelle Bissonette,
>
> Your application received on 1/6/2025 has been
> assigned to a certification analyst and our review of your
> application will be completed in the next 90 to 120 days.
> During this time, we may contact you with questions about
> your application and/or requests for additional
> information and supporting documentation. The certification
> analyst assigned to review your application may also be in
> contact with you to schedule an on-site visit at your
> principal place of business, if required. Your prompt and
> complete responses to any questions we may ask will result
> in the most expeditious completion of your
> application. Failure to adequately respond to our questions in
> a timely manner may result in a determination that
> you have abandoned your application, which would
> require you to reapply after 90 days.
>
> To view your application, visit:
> https://ny.newnycontracts.com/?GO=677
> If you have any questions, please email us at
> ny@newnycontracts.com.
>
> New York State Contract System
> Web: https://ny.newnycontracts.com/
> Email:
> ny@newnycontracts.com
>
> NYS M/WBE Program: http://www.esd.ny.gov/MWBE.html
> This message was sent to: "Michelle Bissonette"
> Sent on: 1/6/2025 9:47:00 AM
> System ReferenceID: 255700689
>

Customer Support
https://ny.newnycontracts.com/
New York State New York State Contract System

Ticket Number: 2860366
#%#2860366%$%

This message was sent to: michelleb@ambient-env.com
Sent on: 1/10/2025 8:09:01 AM
System ReferenceID: 256246335

Certification: View

Help & Tools

Certification List | Add Date Alert

This record is from **New York State Department of Transportation**. It is not managed by New York State.

Vendor Information

BUSINESS NAME	**Ambient Environmental, Inc.**
SYSTEM VENDOR NUMBER	**20167029**
PRIMARY OWNER'S NAME	**Ms. Joella Viscusi**
ETHNIC GROUP	**Other Minority**
GENDER	**Female**

Certification Information

CERTIFYING AGENCY	**New York State Department of Transportation**
CERTIFICATION TYPE	**DBE - Disadvantaged Business Enterprise**
EFFECTIVE DATE	**3/27/2013**
RENEWAL DATE	**3/27/2026**

Contact Information

MAIN COMPANY EMAIL	**joellav@ambient-env.com**
MAIN PHONE	**518-482-0704**
MAIN FAX	**518-482-0750**
MAIN COMPANY WEBSITE	**http://www.ambient-env.com**

Addresses

PHYSICAL ADDRESS	**828 Washington Ave.** **Albany, NY 12203-1622 [map]**
MAILING ADDRESS	**828 Washington Ave.** **Albany, NY 12203-1622 [map]**

Business Capabilities

BUSINESS CERTIFIED FOR	**Environmental Services.**	
FULL DESCRIPTION OF CAPABILITIES/PRODUCTS	**Environmental Services.**	
COMMODITY CODES	**NAICS 541620**	**Environmental consulting services** (More)

Owner Ethnicity and Gender

ETHNIC GROUP	**Other Minority**
GENDER	**Female**

Location

COUNTY	**Albany (NY)**

Certification List

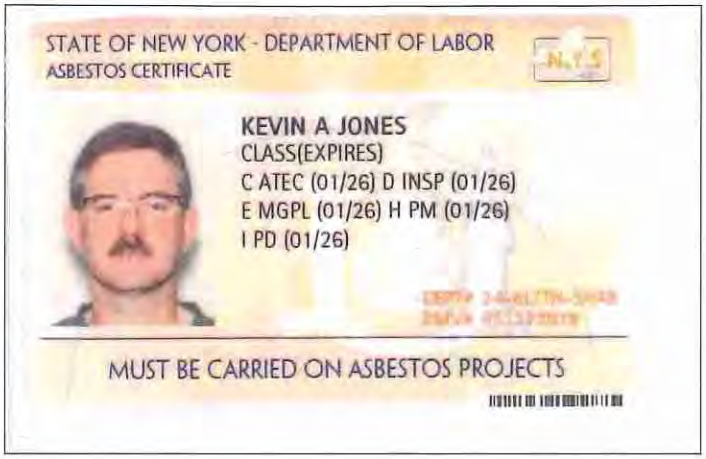
This profile was generated on 2/27/2025

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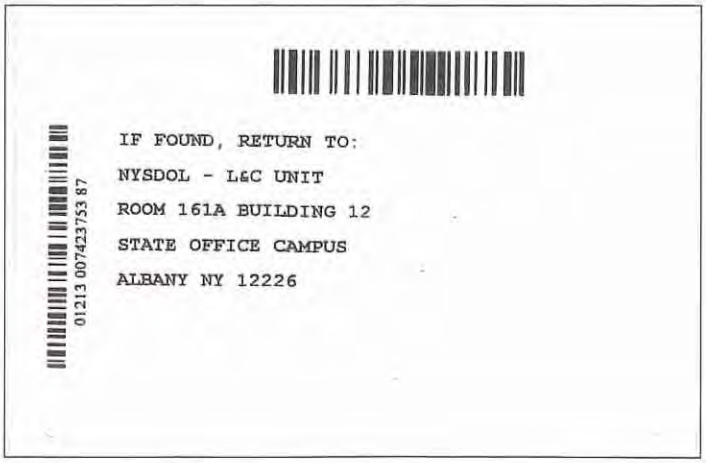
Ambient Environmental, Inc.
Building Science and EHS Solutions
NYS Certified WBE,
SBA EDWOSB & DBE

AMBIENT ENVIRONMENTAL, INC.
NEW YORK STATE DEPARTMENT OF LABOR
ASBESTOS LICENSE

Kevin Jones
Cert No. 24-6LTTH-SHAB
Front of License



Back of License



Codes:

A- Asbestos Handler
B- Restricted Handler
C- Project Air Sampling Technician
D- Inspector – R III
E- Management Planner
F- Operations and Maintenance
G- Supervisor
H- Project Monitor
I- Project Designer
J- Allied Trades

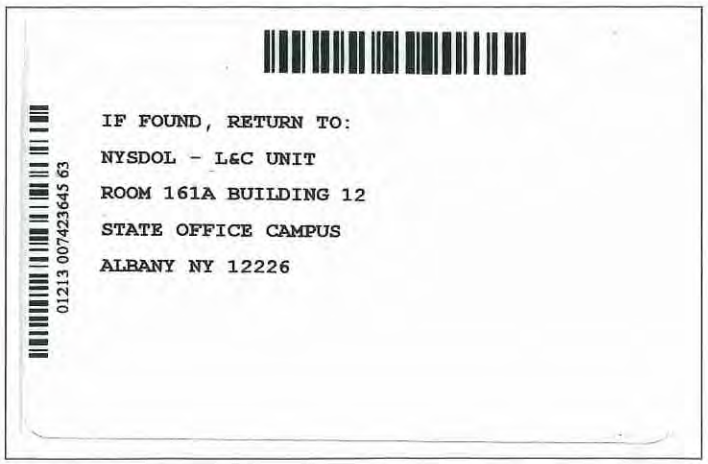
Ambient Environmental, Inc.
Building Science and EHS Solutions
NYS Certified WBE,
SBA EDWOSB & DBE

AMBIENT ENVIRONMENTAL, INC.
NEW YORK STATE DEPARTMENT OF LABOR
ASBESTOS LICENSE

Peter Minotti
Cert No. 2463H4K-SHAB
Front of License



Back of License



Codes:

A- Asbestos Handler
B- Restricted Handler
C- Project Air Sampling Technician
D- Inspector – R III
E- Management Planner
F- Operations and Maintenance
G- Supervisor
H- Project Monitor
I- Project Designer
J- Allied Trades

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2026
Issued April 01, 2025

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. KAROL H. LU
AMERICA SCIENCE TEAM NEW YORK, INC
117 EAST 30TH ST
NEW YORK, NY 10016

NY Lab Id No: 11480

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	Item 198.1 of Manual
	EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual

Serial No.: 70488

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2026
Issued April 01, 2025

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. FAYEZ ABOUZAKI
SCHNEIDER LABORATORIES GLOBAL, INC
2512 WEST CARY STREET
RICHMOND, VA 23220-5117

NY Lab Id No: 11413

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Metals III

Cobalt, Total	EPA 6010D
Molybdenum, Total	EPA 6010D
Thallium, Total	EPA 6010D
Tin, Total	EPA 6010D
Titanium, Total	EPA 6010D

Nitroaromatics and Isophorone

2,4-Dinitrotoluene	EPA 8270D
Nitrobenzene	EPA 8270D

Polychlorinated Biphenyls

Aroclor 1016 (PCB-1016)	EPA 8082A
Aroclor 1221 (PCB-1221)	EPA 8082A
Aroclor 1232 (PCB-1232)	EPA 8082A
Aroclor 1242 (PCB-1242)	EPA 8082A
Aroclor 1248 (PCB-1248)	EPA 8082A
Aroclor 1254 (PCB-1254)	EPA 8082A
Aroclor 1260 (PCB-1260)	EPA 8082A
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A

Polynuclear Aromatics

Acenaphthene	EPA 8270D
Anthracene	EPA 8270D
Benzo(a)anthracene	EPA 8270D
Benzo(a)pyrene	EPA 8270D
Benzo(b)fluoranthene	EPA 8270D
Benzo(g,h,i)perylene	EPA 8270D
Benzo(k)fluoranthene	EPA 8270D

Serial No.: 70458

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov.

ATTACHMENT G

HISTORICAL DOCUMENTATION

Adelaide
ENVIRONMENTAL HEALTH

1511 Route 22, Suite C24
Brewster, NY 10509 845.278.7710
90 State Street, Suite 700
Albany, NY 12207 518.874.0617
1967 Wehrle Drive, Suite One
Buffalo, NY 14221 716.402.4580
E-mail: adelaidemail@adelaidellc.com
Fax: 845.278.7750

LIMITED SURVEY
FOR
ASBESTOS-CONTAINING MATERIALS, LEAD-BASED PAINT & PCBs

PERFORMED AT:

Yonkers Armory
2 Quincy Place
Yonkers, New York 10701
Adelaide Project# MACF:20060.00-IN
OGS Project# 46166

PREPARED FOR:

Mr. John Miranowski
McFarland-Johnson, Inc.
49 Court Street, P.O. Box 1980
Binghamton, New York 13901

PREPARED BY:
Philip J. Page
August 18, 2020

REVIEWED BY:



Stephanie A. Soter
President

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APPENDICES

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1.0 Introduction

1.1 Scope of Work / Project Personnel

Adelaide Environmental Health Associates, Inc. **(Adelaide)** performed an Asbestos, Lead and PCB Survey for Building/Structure Demolition, Renovation, Remodeling and/or Repair, in conformance with ALL Federal, State and Local regulations, on August 12, 2020 for McFarland-Johnson, Inc. The survey is related to New York State Office of General Services (OGS) project# 46166 to replace the boiler and HVAC equipment. The survey included a visual inspection/assessment for hazardous materials throughout accessible interior and/or exterior spaces of the building/structure or portion thereof identified to be demolished, renovated, remodeled or repaired. Certified **Adelaide** personnel (Appendix D), Philip J. Page (NYS Asbestos Inspector/Cert. #12-10888 and EPA Lead-based Paint Inspector/Cert. #LBP-I-I172697-1), performed the visual assessment throughout inspection area(s) identified.

1.2 Executive Summary

On August 12, 2020, **Adelaide** inspected the boiler room, gym, roof and various control valve locations throughout that will be affected by the proposed scope of work for suspect ACM, LBP and PCBs. **Adelaide** collected fourteen (14) suspect asbestos samples/layers, twenty three (23) XRF readings [calibrations included] and zero (0) suspect PCB samples from the above-mentioned area(s). Zero (0) samples/homogenous areas tested positive for asbestos and two (2) XRF readings tested positive for lead-based paint. No suspect PCB-containing materials were observed to be impacted by the above-mentioned scope of work.

1.2.1 Conclusions and Recommendations

The following conclusions and recommendations are prepared by **Adelaide** as per the provided scope of work for Building/Structure Demolition, Renovation, Remodeling and/or Repair. Should the scope of work change, it is recommended that the findings be revisited to determine if additional sampling will be required to satisfy ALL Federal, State and Local regulations.

1.2.2 Asbestos-containing Materials (ACM)

- This survey concluded that the materials listed in Section 2.2 tested ***negative for asbestos***.

1.2.3 Lead-based Paint (LBP)

- This survey concluded that the materials listed in Section 2.3 tested ***positive for lead-based paint.***
- These areas must be either abated or Lead safe work practices must be implemented during the demolition, renovation, remodeling, or repair activities if these areas are to be disturbed.

1.2.4 PolyChlorinated Biphenyls (PCB)

- This survey concluded that no suspect PCB-containing materials were observed to be impacted by the above-mentioned scope of work.

2.0 Summary of Hazardous Materials

2.1 Summary of Identified ACM/PACM

KEY: **ACM** = Materials containing greater than 1% of asbestos; **HA** = Homogeneous Area; **LF** = Linear Feet; **SF** = Square Feet; **PACM** = Presumed Asbestos-containing Materials; **Friable** = ACM capable of being released into air, and which can be crumbled, pulverized, powdered, crushed or exposed by hand-pressure.

Samples collected by **Adelaide** August 12, 2020

HA	Identified ACM	ACM Location(s)	Approx. Qty.	Condition	Friable? (Yes or No)
NO Asbestos-containing Materials (ACM) identified upon PLM, PLM-NOB, QTEM and/or PLM-SM-V analysis, by a laboratory approved under the NYSDOH ELAP, of samples collected/analyzed in reference to the above-mentioned scope of work.					

2.2 Summary of Identified Non-ACM

Samples collected by **Adelaide** August 12, 2020

Identified Non-ACM	Sample Location(s) & HA's
Sheetrock & Joint Compound	Boiler Room Ceiling
Mudded Fittings	Boiler Room, Breeching
Tar (top layer)	Boiler Room, Boiler Sections
Rope Gasket (bottom layer)	
Canvas Wrap (ductwork)	Throughout

2.3 Summary of Identified LBP

Based on review of the data generated by the Thermo Scientific Niton XLp 300A and/or Heuresis Corp. Pb200i Analyzer, the following surfaces tested were identified as lead-based, as defined by HUD/EPA (equal to or in excess of 1.0 milligram per square centimeter):

Readings collected by **Adelaide** August 12, 2020

Location of LBP	LBP Component	Substrate	Color	Condition	Readings (mg/cm2)
Boiler Room	Orange Piping	Metal	Orange	Fair	*1.5 – 1.6*

2.4 Summary of Identified PCB-containing Materials

Inspection performed by **Adelaide** August 12, 2020

Sample #	Location / Description	Material Matrix	Color	Substrate	Analytical Result
NO suspect PCB-containing materials were observed to be impacted by the above-mentioned scope of work.					

2.5 Observations

ASBESTOS-CONTAINING MATERIALS (ACM)
A visual inspection was performed and homogeneous material types were established based on appearance, color and texture. The findings presented in this report are based upon reasonably available information and observed site conditions at the time the assessment was performed. The findings and conclusions of this report are not meant to be indicative of future conditions at the site and does not warrant against conditions that were not evident from visual observations or historical information obtained from others.

Representative bulk sampling was performed on suspect building materials for laboratory analysis and the following is a summary of installed building materials sampled as per the scope of work provided:

- Ceiling Materials – Sheetrock, Joint Compound.
- Thermal System Insulation (TSI) – Mudded Fittings, Canvas Wrap over Fiberglass, Rope Gasket & Tar on Boiler.
- Non-suspect Materials (not sampled) – Fiberglass Insulation, Silicone, Wood, Glass, Metal.

3.0 Asbestos-containing Materials (ACM)

3.1 Field Procedures and Analysis Methodology

Guidelines used for the inspection were established by the U.S. Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, DOC# 560/5-85-024 and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA) and Title 12 NYCRR Part 56-5.1. Field information was organized as per the AHERA concept of a homogeneous area (HA); that is, suspect Asbestos-containing Materials (ACM) with similar age, appearance, and texture were grouped together, sampled and assessed for condition.

For the purposes of this inspection, suspect ACM has been placed in three material categories: thermal, surfacing, and miscellaneous. 1) Surfacing materials are those that are sprayed on, troweled on or otherwise applied to surfaces for fireproofing, acoustical, or decorative purposes (e.g., wall and ceiling plaster). 2) Thermal materials are those applied to heat pipes or other structural components to prevent heat loss or gain or prevent water condensation (e.g., pipe and fitting insulation, duct insulation, boiler flue). 3) Miscellaneous materials are interior building materials on structural components, structural members or fixtures, such as floor and ceiling tiles, etc. and do not include surfacing material or thermal system insulation.

SURFACING MATERIALS
Surfacing materials were grouped into homogeneous sampling areas. A homogeneous area contains material that is uniform in color and texture and appears identical in every other respect. Materials installed at different times belong to different sampling areas. Homogeneous areas were determined on per floor basis.

The following protocol was used for determining the number of samples to be collected:

- At least three bulk samples were collected from each homogeneous area that is 1,000 square feet or less.
- At least five bulk samples were collected from each homogeneous area that is greater than 1,000 square feet but less than or equal to 5,000 square feet.
- At least seven bulk samples were collected from each homogeneous area that is greater than 5,000 square feet.

THERMAL SYSTEM INSULATION (TSI)

The concept of homogeneous sampling areas applies equally well to thermal insulation as to surfacing material. A "typical" building may contain multiple insulated pipe runs from any combination of the following categories:

- Hot water supply and/or return
- Cold water supply
- Chilled water supply
- Steam supply and/or return
- Roof or system drain

The following protocol was used for determining the number of samples to be collected.

- Collect at least three bulk samples from each homogeneous area of thermal system insulation.
- Collect at least one bulk sample from each homogeneous area of patched thermal system insulation if the patched section is less than 6 linear or square feet.
- In a manner sufficient to determine whether the material is ACM or not ACM, collect a minimum of three bulk samples from each homogeneous insulated mechanical system tee, elbow, and valve.

Bulk samples are not collected from any homogeneous area where the certified inspector has determined that the thermal system insulation is fiberglass, foam glass, or rubber.

MISCELLANEOUS MATERIALS

Miscellaneous materials are grouped into different homogeneous areas and at least two bulk samples are collected from each homogeneous area as per the clarification letter from the EPA and the Professional Abatement Contractors of New York, Inc in November of 2007.

Samples collected were analyzed by a laboratory approved under the New York State Department of Health Environmental Laboratory Approval Program (NYSDOH ELAP). Samples were analyzed in the laboratory by Polarized Light Microscopy (PLM), Polarized Light Microscopy-NOB (PLM-NOB) and/or Quantitative Transmission Electron Microscopy (QTEM), as required. Sample collection and laboratory analysis were conducted in compliance with the requirements of Title 12 NYCRR Part 56-5.1, 29 CFR 1926.1101 and standard EPA & OSHA accepted methods. Samples consisting of multiple layers were separated and analyzed independently in the laboratory.

3.2 Regulatory Guidelines and Requirements for ACM

FEDERAL

In accordance with the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) established National Emission Standards for hazardous Air Pollutants (NESHAP) to protect the public from exposure to airborne pollutants. Asbestos was one of the air pollutants, which was addressed under the NESHAP 40 CFR Part 61. The purpose of asbestos NESHAP regulations is to protect the public health by minimizing the release of asbestos when facilities, which contain ACM, are being renovated or demolished. EPA is responsible for enforcing regulations related to asbestos during renovations and demolition, however, the CAA allows the EPA to delegate this authority to State and Local Agencies. Even after EPA delegate's responsibility to a state or Local agency, EPA retains the authority to oversee agency performance and to enforce NESHAP regulations as appropriate.

NEW YORK STATE

Asbestos in New York State is regulated under the Labor Law Section 906, Part 56 of Title 12 of the Official Compilation of Codes, Rules, and Regulations. Within the department and for the purpose of the Department of Labor, this part (rule) is known as Industrial Code Rule No. 56 (ICR 56) relating to hazards to the public safety and health, during the removal, encapsulation, or disturbance of friable asbestos, or any handling of ACM that may result in the release of asbestos fiber.

As specified in Title 12 NYCRR Part 56-5.1 (h) and (i), "If the building/structure asbestos survey finds that the portion of the building/structure to be demolished, renovated, remodeled, or have repair work contains ACM, PACM, suspect miscellaneous ACM assumed to be ACM, or asbestos material, which is impacted by the work, the owner or the owner's agent shall conduct, or cause to have conducted, asbestos removal performed by a licensed asbestos abatement contractor in conformance with all standards set forth in this Part. All ACM, PACM, suspect miscellaneous ACM assumed to be ACM, or asbestos material impacted by the demolition, renovation, remodeling or repair project shall be removed as per this Part, prior to access or disturbance by other uncertified trades or personnel. No demolition, renovation, remodeling or repair work shall be commenced by any owner or the owner's agent prior to the completion of the asbestos abatement in accordance with the notification requirements of this Part…All building/structure owners and asbestos abatement contractors on a demolition, renovation, remodeling, or repair project, which includes work covered by this part, shall inform all trades on the work site about PACM, ACM, asbestos material and suspect miscellaneous ACM…Bids may be advertised and contracts awarded for demolition, remodeling, renovation, or repair work, but no work on the current intermediate portion of the project shall commence on the demolition, renovation, remodeling or repair work by any owner or agent prior to completion of all necessary asbestos abatement work for the current intermediate portion of the entire project, in conformance with all standards set forth in this Part." All work conducted should be in accordance with all legal requirements, including but not limited to U.S. Environmental Protection Agency (EPA) National Emissions Standards for Hazardous Air Pollutants (NESHAP) [40 CFR Part 61], New York State Industrial Code Rule 56 Asbestos Regulations (ICR 56) and Chapter 1 of Title 15 of the Rules of the City of New York Regulations, as applicable. Advance notification of the asbestos project to the USEPA, NYSDOL, and NYCDEP may be required.

NEW YORK CITY

Asbestos Control Program (ACP), Title 15, Chapter 1 of the New York City Department of Environmental Protection (NYCDEP) regulates all asbestos abatement activities occurring within the City of New York. The ACR regulations also require asbestos surveys and abatement work to be performed by a NYCDEP certified asbestos investigator and asbestos workers, respectively.

The New York City Department of Buildings (NYCDOB) requires an ACP notification to be included with the renovation/demolition permit applications. The notification is performed using an ACP 5 or ACP 20/21 forms.

All confirmed ACM will need to be removed prior to any building renovation or demolition. The removal and disposal of ACM must be performed by a NYS-DOL licensed asbestos handling contractor in accordance with Federal, state, and local regulations. Proper notifications must be filed with the US-EPA, NYS-DOL, NYC-DEP and other regulatory agencies prior to performing such activities.

As required by the NYS-DOL and NYC-DEP regulations, the abatement project must be monitored by a NYS-DOL certified project monitor. The project monitor oversees contractor's work practices and also performs pre, during, and final clearance post abatement air sampling in accordance with the state and city regulations.

CONCEALED ACM

In addition to the ACMs identified at the site, there is a possibility that concealed suspect ACM may exist at the building/structure. As such, if any concealed suspect ACM is encountered during future construction related activities, the work should immediately stop. Prior to resuming the work, the suspect ACM should either be 1) Sampled by an appropriately-certified asbestos professional and submitted to an Approved NYSDOH ELAP laboratory for asbestos analysis or 2) Presumed to be ACM (PACM) and removed by a licensed asbestos abatement contractor for disposal in accordance with all applicable regulations.

4.0 Lead-based Paint (LBP)

4.1 Applicable Standards/Guidelines for LBP

The U.S Department of Housing and Urban Development (HUD) defines the action level for lead-based paint as a lead content equal to or greater than 1.0 milligrams of lead per square centimeter of painted surface (≥1.0 mg Pb/cm^2) when measured with an XRF analyzer or 0.5 percent by weight when chemically tested. This definition is described in the HUD "Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing, September 1990". The state of New York's definition of the action level for lead-based paint is consistent with the level established by HUD.

Please note that although the HUD defines lead-based paint as paint having lead concentrations equal or greater than 1.0 mg/cm2, the Occupational Safety and Health Administration (OSHA) considers any concentration of lead in paint to be lead-containing paint. Regardless of the lead concentrations in paint, the contractor shall comply with 29 CFR 1926.62, OSHA regulations, and take precautionary measures for dust control and limit employee exposure to lead dust during the renovations.

Painted surfaces that would be impacted by planned activities such as drilling, cutting, scrapping, etc. and create dust should be properly addressed by following safe work practices, good housekeeping procedures and/or following proper abatement procedures. Grinding and sanding of paint without HEPA filter exhaust, open flame gas fired torch, unconfined abrasive blasting, and chemical strippers containing methylene chloride or other human carcinogenic chemicals are not recommended.

The Federal Resource Conservation and Recovery Act (RCRA) regulation governs the handling, transportation, and disposal of hazardous materials. Every demolition/renovation debris generator has the responsibility to determine whether the debris exhibits one or more of the characteristic wastes listed in subpart C of 40 CFR Part 261. In the case of demolition debris, lead in LBP is a characteristic waste, and therefore, it is the responsibility of the renovation/demolition debris generator to characterize the waste prior to its disposal and, if found to be hazardous waste as defined by Federal Statutes, to be properly handled and disposed.

Metal objects painted with LBP are exempt from disposal regulations applicable to lead, provided they are properly recycled. All metal objects that are painted with LBP should be sent to a certified recycling facility.

This report is not Lead-based Paint abatement specification and should not be used for specifying removal methods or techniques.

4.2 XRF Information

Thermo Scientific Niton XLp 300A X-Ray Fluorescence (XRF), Heuresis Corp. Pb200i X-Ray Fluorescence (XRF) Analyzer(s) were used to survey the building/structure or portion thereof identified to be demolished, renovated, remodeled or repaired for the presence of LBP. The XRF analyzers are using a sealed source of XLp 300A X-Ray Fluorescence (XRF) Cd109 with 40mCi and the Pb200i X-Ray Fluorescence (XRF) Co 57 with 5mCi sources, meeting HUD requirements for the analysis of paint films. During the analysis, the intensity of the x-rays is converted by the instrument's internal software into an estimate of the concentration of lead in the substance being analyzed. The results are interpreted as concentrations of lead in milligrams per square centimeter. This device is a field-screening tool, used to collect multiple readings in a short period of time. The method of measurement is based on spectrometric analysis of lead x-ray fluorescence within a controlled depth of interrogation. The reading is an estimate of lead content in all layers of paint. The results are displayed in milligrams per square centimeter (mg/cm2). The device(s) used for this inspection were the Thermo Scientific Niton XLp 300A Analyzer(s), Serial number 102951, Source date 9/15/17, and/or Heuresis Corp. Pb200i X-Ray Fluorescence (XRF) Analyzer(s) Serial

Number 2104, Source date 1/25/19, Serial number 2231, Source date 4/5/19, Serial number 2595, Source date 1/31/20.

5.0 PolyChlorinated Biphenyls (PCB)

5.1 Background and Protocol for PCBs

PolyChlorinated Biphenyls (PCB) are a group of manmade chemicals. PCBs were widely used in building materials and electrical products in the past. The U.S. Environmental Protection Agency banned the manufacturing and certain uses of PCBs in 1978, but buildings constructed or renovated between 1950 and 1978 may still have building materials and electrical products that contain PCBs. Examples of products that may contain PCBs include caulk, paint, glues, plastics, fluorescent lighting ballasts, transformers and capacitors.

PCBs are currently prohibited from being used in caulk and other commodities (U.S. EPA, 40 CFR 761). However, prior to 1977, PCBs were present in some caulking materials used in the construction of schools and other buildings. Studies have shown that concentrations of PCB can exceed 1% (10,000 ppm) by weight in some caulk materials. An investigation of 24 buildings in the Greater Boston Area revealed that one-third of the buildings tested (8 of 24) contained caulking materials with polychlorinated biphenyl (PCB) content exceeding 50 ppm by weight with an average concentration of 15,600 ppm or 1.5% (Herrick et al., 2004). These buildings included schools and other public buildings.

The U.S. EPA regulates the disposal of caulk, as well as soil and other materials contaminated with PCBs from caulk, if the concentration of PCBs exceeds 50 ppm. Such materials must be disposed at an appropriate approved or permitted facility.

U.S. EPA regulation 40 CFR 761 defines "PCB remediation waste" to include contaminated soil, and specifies a clean-up level of <1ppm without further conditions for unrestricted use in "high occupancy areas" (i.e., areas where individuals may be present for 335 hours or more per year). PCB caulk is defined as a PCB bulk product waste, and its disposal is subject to U.S. EPA regulations under the Toxic Substances Control Act (40 CFR761.62).

This protocol has been developed in consultation with the New York State Department of Health, Division of Environmental Health Assessment, Bureau of Toxic Substance Assessment to address concerns about properly managing caulk containing PCBs that will be disturbed during building renovation and maintenance.

CAULK SAMPLE COLLECTION

Buildings constructed or renovated between 1950 and 1977 have a potential to contain PCBs in existing caulk. Representative samples of caulking materials from these buildings prior to renovation or demolition work should be tested to determine whether the caulk is contaminated with PCBs. Professional judgement should be used to design the sampling plan for characterizing caulk throughout the building. The consultant should pay particular attention to construction and maintenance records and to the appearance of caulking materials (likenesses and differences). Samples should be taken from window frames or expansion joints that have not been repaired or replaced since 1977. Depending on specific information provided in the workplan developed by the project manager, such as window placement, compositing of some caulk samples might be appropriate. Caulk from different time periods or that have a different appearance should not be composited together.

It is important to note that caulk used during the time period of interest may also contain asbestos or lead. Therefore, the work plan should include testing, handling and disposal requirements appropriate for such regulated materials.

SOIL SAMPLE COLLECTION

Buildings constructed or renovated between 1950 and 1977, which have undergone further renovation after 1977, may have residual PCB contamination in adjacent soils. An adequate representation of surface soils should be tested to assess the potential for residual PCB contamination.

When designing a representative soil sampling plan, the likelihood of soil contamination from deteriorated or deteriorating caulk should be considered. Caulk that has in the past dried out and fallen to the ground is the most important source of soil contamination. Thus, sampling should include soil beneath windows where caulk has obviously deteriorated or been replaced because of previous deterioration. Areas subject to the stress of sun and prevailing weather (typically the southern and western side of each structure) should be included for sampling. These samples would provide a conservative evaluation of soil conditions due to an increased potential for material failure, possibly resulting in contamination of soil. Also, if earlier renovation or demolition work may have stockpiled potentially contaminated caulk in other school areas, the school should consider having soils in those areas tested as well.

Soil sampling should focus on areas of the building where "banks" or "gangs" of windows exist/were replaced and areas of the structure where large expansion joints are located. This would provide a conservative evaluation of potential soil contamination and permit efficient sampling.

Any obvious pieces of caulk encountered during the collection of soil samples should be removed from the soil, categorized (with respect to location and depth) and treated as a separate potential sample.

Depth – At each soil sample location, soil should be collected in depth intervals of 0-2 inches, 2-6 inches and 6-12 inches. The surface soil sample (0-2 inches) should be collected from below the vegetative surface layer, if present.

Distance from Structure – Samples should be collected within 1 foot of the building and 5 feet from the building.

Samples should be collected in a manner that prevents cross-contamination. Augers or driven core samplers should be avoided, as any caulk caught on the edge of this type of tool could be driven to lower intervals. Using a designated trowel for each sample location and each interval of depth is encouraged. If the sampling tool is field cleaned between samples, do so in a manner that does not add solvent contamination to the environment.

NOTE

Sampling was performed by **Adelaide** in compliance with protocols outlined by New York State Education Department (NYSED) and USEPA 40 CFR 761, as described above. Only one sample per homogeneous area was required for analysis of suspect PCB-containing materials. Bulk sample(s) were properly packaged and forwarded, with associated Chain of Custody (COC), to York Analytical Laboratories, Inc., for analysis using method SW846-3550B/8082. The analysis will determine if the suspect material will be classified as PCB-containing at or above 50 ppm or mg/kg as per the EPA regulations. Copies of the analytical results are contained within attached appendices for review.

6.0 General Discussion

All construction personnel as well as individuals who have access to locations where asbestos-containing materials (ACM), lead-based paints (LBP) and/or polychlorinated biphenyls (PCB) exists should be informed of its presence and the proper work practices in these areas. Conspicuous labeling of all ACM is suggested to ensure personnel is adequately informed. Personnel should be informed not to rest, lean or store material or equipment on or near these surfaces and not to cut, saw, drill, sand or disturb ACM. All removal, disturbance, and repair of ACM should be performed in compliance with Title 12 NYCRR Part 56 by persons properly trained to handle ACM. Facility custodial and maintenance personnel should receive training commensurate with their work activities; as defined in 29 CFR 1910.1001.

7.0 Disclaimers

Adelaide certifies that the information contained within this report is based solely upon site observations and the results of laboratory analysis for samples collected during this survey/assessment. These observations and results are time dependent, subject to changing site conditions and revisions to Federal, State and Local regulations. **Adelaide** warrants that these findings have been promulgated after being prepared in general accordance with generally accepted practices in the abatement industries. **Adelaide** also recognizes that inspection laboratory data is not usually sufficient to make all abatement and management decisions. No other warranties are expressed or implied.

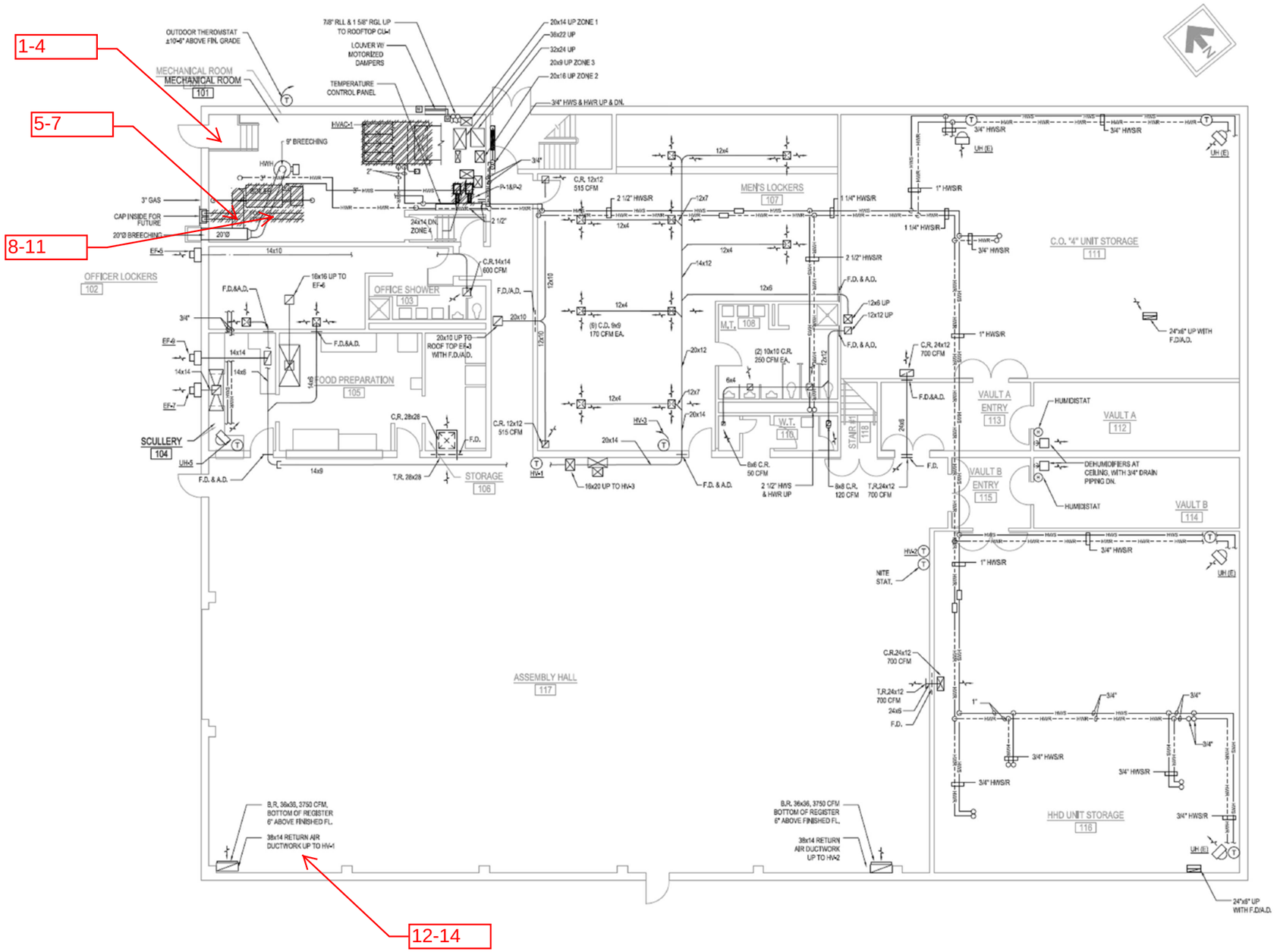
Due to the potential for concealed Asbestos-containing Materials (ACM) and/or other regulated materials, this report should not be construed to represent all ACM and/or regulated materials within the site(s). All quantities of ACM and/or other regulated materials identified, and all dimensions listed within this report are approximate and should be verified On-site.

This inspection report is not intended to be used as the sole basis for soliciting pricing for asbestos abatement. An abatement plan, specification, drawing and/or Variances should be developed to identify scope, timing, phasing and remediation means & methods for any asbestos project. The Linear and/or Square Footages (LF / SF) listed within this Report are only approximates. Abatement Contractor(s) are required to visit the building(s) in order to take actual field measurements within each listed location.

NYSDOH issued an Interim Guidance Letter, on July 9, 2013, which outlined the approved testing alternative for materials containing vermiculite. Specifically, "...Where TSI, surfacing materials, or other PACM or miscellaneous suspect ACM contain greater than 10% vermiculite, Item 198.6 may be used to evaluate the asbestos content of the material; provided, however, that any test results using this method must be reported with the following conspicuous disclaimer: *"This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."* On July 22, 2014, NYSDOH issued a Regulatory Guidance Letter outlining the new approved analytical methods for testing sprayed-on fireproofing (SOFP) that contains vermiculite. NYSDOH authorized the use of ***two*** analytical methods to evaluate the asbestos content of SOFP that contains vermiculite. As per NYSDOH Guidelines, *"After October 31, 2014, one of the new methods **must** be used to test SOF-V, regardless of the percent of vermiculite."* On May 6, 2016, NYSDOH issued a Regulatory Guidance Letter outlining the new protocol for analytical procedure for surfacing materials (ie. plaster, stucco, etc.) that contain vermiculite. As per NYSDOH Guidelines, "*The original July 2013 and July 2014 letters addressed SOF-V only. Both NYS DOH's Item 198.8 and RJ Lee Group Method 055 shall now be applied to test for vermiculite in other Surfacing Material (SM) as defined in 12 NYCRR Part 56 (NYS Industrial Code Rule 56).*"

APPENDIX A

SAMPLE LOCATION MAP(S)



Level 1 Key Plan - Sample Locations

Drawing Not to Scale

Adelaide ENVIRONMENTAL HEALTH
1511 Route 22
Brewster, NY 10509
Phone: (845) 278-7710
Fax: (845) 278-7750

CLIENT:
McFarland-Johnson
49 Court Street
Binghamton, New York 13901

OGS Project #
46166

SURVEY LOCATION:
Yonkers Armory
2 Quincy Place
Yonkers, New York 10701

DATE: 08/18/2020

DRAWING VERSION: No. 1

ISSUED FOR:
Limited HazMat Survey

ADELAIDE PROJECT NO.:
MACF:20060.00-IN

DRAWING PREPARED BY:
PJP

SL-01

APPENDIX B

ASBESTOS ANALYTICAL RESULTS

Table I
Summary of Bulk Asbestos Analysis Results
OGSx:20060.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, NY 10701

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01	1	1A	----	----	----	----	NAD	NA
Location: 1st Fl. / MER / Ceiling - Sheetrock								
02	2	1A	----	----	----	----	NAD	NA
Location: 1st Fl. / MER / Ceiling - Sheetrock								
03	3	1B	----	----	----	----	NAD	NA
Location: 1st Fl. / MER / Ceiling - Joint Compound								
04	4	1B	----	----	----	----	NAD	NA
Location: 1st Fl. / MER / Ceiling - Joint Compound								
05	5	2	----	----	----	----	NAD	NA
Location: 1st Fl. / MER / Breeching - Mudded Fitting								
06	6	2	----	----	----	----	NAD	NA
Location: 1st Fl. / MER / Breeching - Mudded Fitting								
07	7	2	----	----	----	----	NAD	NA
Location: 1st Fl. / MER / Breeching - Mudded Fitting								
08	8	3A	0.202	45.4	45.4	9.2	NAD	NAD
Location: 1st Fl. / MER / Boiler Sections / Top Layer - Tar								
09	9	3A	0.257	48.4	44.8	6.8	NAD	NAD
Location: 1st Fl. / MER / Boiler Sections / Top Layer - Tar								
10	10	3B	----	----	----	----	NAD	NA
Location: 1st Fl. / MER / Boiler Sections / Bottom Layer - Rope Gasket								
11	11	3B	----	----	----	----	NAD	NA
Location: 1st Fl. / MER / Boiler Sections / Bottom Layer - Rope Gasket								
12	12	4	----	----	----	----	NAD	NA
Location: 2nd Fl. / Assembly Hall / HV-1 Ductwork / Over FG - Canvas Wrap								
13	13	4	----	----	----	----	NAD	NA
Location: 2nd Fl. / Assembly Hall / HV-1 Ductwork / Over FG - Canvas Wrap								
14	14	4	----	----	----	----	NAD	NA
Location: 2nd Fl. / Assembly Hall / HV-1 Ductwork / Over FG - Canvas Wrap								

See Reporting notes on last page

Client Name: Adelaide Environmental Health

Table I
Summary of Bulk Asbestos Analysis Results

OGSx:20060.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, NY 10701

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM

Analyzed by: Khaalid W. Perine; Date Analyzed 8/13/2020 Hitachi #747/Nova

**Quantitative Analysis (Semi/Full); Bulk Asbestos Analysis - PLM by Appd E to Subpt E, 40 CFR 763 or NYSDOH ELAP 198.1 for New York friable samples or NYSDOH ELAP 198.6 for New York NOB samples; TEM (Semi/Full) by EPA 600/R-93/116 (or NYSDOH ELAP 198.4; for New York samples); NAD = no asbestos detected during a quantitative analysis; NA = not analyzed; Trace = <1%; (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only; Qualitative Analysis: Asbestos analysis results of "Present" or "NVA = No Visible Asbestos" represents results for Qualitative PLM or TEM Analysis only (no accreditation coverage available from any regulatory agency for qualitative analyses): NVLAP (PLM) 200546-0, NYSDOH ELAP Lab 11480, AIHA-LAP, LLC (PLM) Lab ID 102843.

Warning Note: PLM limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed deposits for which PLM evaluation is recommended (i.e. soils and other heterogenous materials).

Reviewed By: for PM

AmeriSci New York
117 EAST 30TH ST.
NEW YORK, NY 10016
TEL: (212) 679-8600 • FAX: (212) 679-3114

PLM Bulk Asbestos Report

Adelaide Environmental Health
Attn: John Soter
1511 Rte. 22, Suite C24

Brewster, NY 10509

Date Received 08/13/20 **AmeriSci Job #** 220082255
Date Examined 08/13/20 **P.O. #**
ELAP # 11480 **Page** 1 **of** 3
RE: OGSx:20060.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, NY 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1 1A	220082255-01 **Location:** 1st Fl. / MER / Ceiling - Sheetrock	*No*	NAD [1] (by NYS ELAP 198.1) by Valeriu Voicu on 08/13/20
Analyst Description: Brown/White, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 7 %, Fibrous glass Trace, Non-fibrous 93 %			
2 1A	220082255-02 **Location:** 1st Fl. / MER / Ceiling - Sheetrock	*No*	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 08/13/20
Analyst Description: Grey, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 2 %, Fibrous glass 1 %, Non-fibrous 97 %			
3 1B	220082255-03 **Location:** 1st Fl. / MER / Ceiling - Joint Compound	*No*	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 08/13/20
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose Trace, Non-fibrous 100 %			
4 1B	220082255-04 **Location:** 1st Fl. / MER / Ceiling - Joint Compound	*No*	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 08/13/20
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose Trace, Non-fibrous 100 %			
5 2	220082255-05 **Location:** 1st Fl. / MER / Breeching - Mudded Fitting	*No*	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 08/13/20
Analyst Description: Grey, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose Trace, Fibrous glass 15 %, Non-fibrous 85 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSx:20060.00-IN; Yonkers Armory; 2 Quincy Place,
Yonkers, NY 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
6 2	220082255-06 **Location:** 1st Fl. / MER / Breeching - Mudded Fitting	***No***	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 08/13/20
Analyst Description: Grey/Brown, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose Trace, Fibrous glass 7 %, Non-fibrous 93 %			
7 2	220082255-07 **Location:** 1st Fl. / MER / Breeching - Mudded Fitting	***No***	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 08/13/20
Analyst Description: Grey, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose Trace, Fibrous glass 10 %, Non-fibrous 90 %			
8 3A	220082255-08 **Location:** 1st Fl. / MER / Boiler Sections / Top Layer - Tar	***No***	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 08/13/20
Analyst Description: Black, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Fibrous glass 3 %, Non-fibrous 6.2 %			
9 3A	220082255-09 **Location:** 1st Fl. / MER / Boiler Sections / Top Layer - Tar	***No***	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 08/13/20
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Fibrous glass Trace, Non-fibrous 6.8 %			
10 3B	220082255-10 **Location:** 1st Fl. / MER / Boiler Sections / Bottom Layer - Rope Gasket	***No***	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 08/13/20
Analyst Description: Grey, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose Trace, Fibrous glass 97 %, Non-fibrous 3 %			
11 3B	220082255-11 **Location:** 1st Fl. / MER / Boiler Sections / Bottom Layer - Rope Gasket	***No***	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 08/13/20
Analyst Description: Grey, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose Trace, Fibrous glass 98 %, Non-fibrous 2 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSx:20060.00-IN; Yonkers Armory; 2 Quincy Place,
Yonkers, NY 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
12 4	220082255-12 **Location:** 2nd Fl. / Assembly Hall / HV-1 Ductwork / Over FG - Canvas Wrap	***No***	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 08/13/20
Analyst Description: White, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 75 %, Fibrous glass Trace, Non-fibrous 25 %			
13 4	220082255-13 **Location:** 2nd Fl. / Assembly Hall / HV-1 Ductwork / Over FG - Canvas Wrap	***No***	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 08/13/20
Analyst Description: OffWhite/Yellow, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 40 %, Fibrous glass 5 %, Non-fibrous 55 %			
14 4	220082255-14 **Location:** 2nd Fl. / Assembly Hall / HV-1 Ductwork / Over FG - Canvas Wrap	***No***	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 08/13/20
Analyst Description: OffWhite, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 80 %, Fibrous glass 1 %, Non-fibrous 19 %			

Reporting Notes:

(1) This PLM job was analyzed using Olympus BH-2 Pol Scope S/N 229915

Analyzed by: Valeriu Voicu _____

*NAD/NSD =no asbestos detected; NA =not analyzed; NA/PS=not analyzed/positive stop, (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; PLM Bulk Asbestos Analysis by Appd E to Subpt E, 40 CFR 763 (NVLAP 200546-0), ELAP PLM Method 198.1 for NY friable samples, which includes the identification and quantitation of vermiculite or ELAP 198.6 for NOB samples or EPA 400 pt ct by EPA 600-M4-82-020 (NY ELAP Lab 11480); Note:PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab.This PLM report relates ONLY to the items tested. AIHA-LAP, LLC Lab ID 102843, RI Cert AAL-094, CT Cert PH-0186, Mass Cert AA000054.

Reviewed By:_____ _____END OF REPORT_____

Adelaide Environmental Health Associates, Inc
1511 Route 22, Suite C24
Brewster, NY 10509
845-278-7710
845-278-7750 - fax

Site Address: **Yonkers Armory**	Date: **08/12/20**	Inspector(s) **Philip J. Page**
2 Quincy Place		
Yonkers, NY 10701	Project #: **OGSx:20060.00-IN**	

Sample ID #	Homogeneous Area	Floor Level	Sample Location/Description	Quantity (In Feet)	Friable NonFriable	Condition g, d, sd
1	1_A	1	MER, CEILING - SHEETROCK			
2	↓	↓	↓			
3	1_B	↓	- JOINT COMPOUND #220082255			
4	↓	↓	↓			
5	2	↓	, BREECHING - MUDDED FITTINGS			
6	↓	↓	↓			
7	↓	↓	↓			
8	3_A	↓	, BOILER SECTIONS, TOP LAYER - TAR			
9	↓	↓	↓			
10	3_B	↓	, BOTTOM - ROPE GASKET			
11	↓	↓	↓			
12	4	2	ASSEMBLY HALL, HV-1 DUCTWORK, OVER FG - CANVAS WRAP			
13	↓	↓	↓			

Special Instructions/ Turnaround Time:

Stop at 1st Positive per Homogenous Area **24HR TAT**

E-Mail Results to AdelaideLabResults@adelaideilc.com & ppage@adelaideilc.com

Relinquished by:
Received by: 8/13/20 1115
Relinquished by:
Received by:

Adelaide Environmental Health Associates, Inc
1511 Route 22, Suite C24
Brewster, NY 10509
845-278-7710
845-278-7750 - fax

Site Address:	Date:	Inspector(s)
Yonkers Armory	**08/12/20**	**Philip J. Page**
2 Quincy Place		
Yonkers, NY 10701	Project #: **OGSx:20060.00-IN**	

Sample ID #	Homogeneous Area	Floor Level	Sample Location/Description	Quantity (In Feet)	Friable NonFriable	Condition g, d, sd
14	4	2	Assembly Hall, HV-1 Ductwork, over FG - Canvas Wrap			
			#22008225 5			

Special Instructions/ Turnaround Time:

Stop at 1st Positive per Homogenous Area ***24HR TAT***

E-Mail Results to AdelaideLabResults@adelaidellc.com & ppage@adelaidellc.com

Relinquished by:
Received by: 8/13/20 1115
Relinquished by:
Received by:

APPENDIX C

XRF READINGS

Adelaide Environmental Heath Associates Inc.
1511 Route 22, Suite C-24
Brewster, New York 10509
Adelaide Project# MACF:20060.00-IN
OGS Project# 46166
Project Name: Yonkers Armory- Boiler Replacement Project
Inspector: Philip J. Page

Reading #	Date	Time	Space Type	Floor	Room	Component	Substrate	Color	Condition	Lead Concentration (mg/cm2)	Result
1	**8/12/2020**	**7:43:48**	**Yonkers Armory**		**Calibration**					**1.1**	**Positive**
2	**8/12/2020**	**7:44:01**	**Yonkers Armory**		**Calibration**					**1**	**Positive**
3	**8/12/2020**	**7:44:14**	**Yonkers Armory**		**Calibration**					**1.1**	**Positive**
4	8/12/2020	7:47:40	Yonkers Armory	2nd Floor	Gym	HV-1	Metal	Grey	Fair	0.1	Negative
5	8/12/2020	7:47:48	Yonkers Armory	2nd Floor	Gym	HV-1	Metal	Grey	Fair	0	Negative
6	8/12/2020	7:48:16	Yonkers Armory	2nd Floor	Gym	Ductwork	Metal	Light Grey	Fair	0.1	Negative
7	8/12/2020	7:48:23	Yonkers Armory	2nd Floor	Gym	Ductwork	Metal	Light Grey	Fair	0	Negative
8	8/12/2020	7:50:48	Yonkers Armory	2nd Floor	Gym	Bar Joist	Metal	Red	Fair	0.2	Negative
9	8/12/2020	8:49:36	Yonkers Armory	1st Floor	MER	Ceiling	Drywall	White	Fair	0	Negative
10	**8/12/2020**	**8:50:14**	**Yonkers Armory**	**1st Floor**	**MER**	**Pipe**	**Metal**	**Orange**	**Fair**	**1.6**	**Positive**
11	**8/12/2020**	**8:50:39**	**Yonkers Armory**	**1st Floor**	**MER**	**Pipe**	**Metal**	**Orange**	**Fair**	**1.5**	**Positive**
12	8/12/2020	8:50:56	Yonkers Armory	1st Floor	MER	Pipe	Metal	Yellow	Fair	0.1	Negative
13	8/12/2020	8:51:15	Yonkers Armory	1st Floor	MER	Pipe	Metal	Yellow	Fair	0.2	Negative
14	8/12/2020	8:52:23	Yonkers Armory	1st Floor	MER	Boiler	Metal	Grey	Fair	0	Negative
15	8/12/2020	8:52:55	Yonkers Armory	1st Floor	MER	Burner	Metal	Blue	Fair	0.3	Negative
16	8/12/2020	8:53:45	Yonkers Armory	1st Floor	MER	HV-1	Metal	Grey	Fair	0.1	Negative
17	8/12/2020	8:54:16	Yonkers Armory	1st Floor	MER	Pump	Metal	Red	Fair	0.4	Negative
18	8/12/2020	8:54:26	Yonkers Armory	1st Floor	MER	Pump	Metal	Red	Fair	0.2	Negative
19	8/12/2020	9:06:10	Yonkers Armory	Exterior	Roof	Trane Unit	Metal	Light Green	Poor	0.1	Negative
20	8/12/2020	9:06:45	Yonkers Armory	Exterior	Roof	Curb	Metal	Black	Fair	0.3	Negative
21	**8/12/2020**	**9:11:57**	**Yonkers Armory**		**Calibration**					**1**	**Positive**
22	**8/12/2020**	**9:12:10**	**Yonkers Armory**		**Calibration**					**1**	**Positive**
23	**8/12/2020**	**9:12:23**	**Yonkers Armory**		**Calibration**					**1.1**	**Positive**

APPENDIX D

PERSONNEL AND LABORATORY CERTIFICATIONS

New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit
State Campus, Building 12
Albany, NY 12240

ASBESTOS HANDLING LICENSE

Adelaide Environmental Health Associates, Inc.
Suite C24
1511 Route 22

Brewster, NY 10509

FILE NUMBER: 99-0656
LICENSE NUMBER: 29305
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 06/29/2020
EXPIRATION DATE: 07/31/2021

Duly Authorized Representative – John Soter:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Eileen M. Franko, Director
For the Commissioner of Labor

SH 432 (8/12)

United States Environmental Protection Agency

This is to certify that

Adelaide Environmental Health Associates, Inc

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint renovation, repair, and painting activities pursuant to 40 CFR Part 745.89

In the Jurisdiction of:

All EPA Administered States, Tribes, and Territories

This certification is valid from the date of issuance and expires December 05, 2022

NAT-15081-2

Certification #

June 21, 2017

Issued On

Michelle Price, Chief

Lead, Heavy Metals, and Inorganics Branch

STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE

N.Y.S



PHILIP J PAGE
CLASS(EXPIRES)
C ATEC(05/21) D INSP(05/21)
H PM (05/21) I PD (05/21)

CERT# 12-10888
DMV# 216687928

MUST BE CARRIED ON ASBESTOS PROJECTS

01213 00536798828

EYES BRO
HAIR BLN
HGT 6' 00"

IF FOUND RETURN TO:
NYSDOL - L&C UNIT
ROOM 161A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240

United States Environmental Protection Agency

This is to certify that



Philip J Page

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Inspector

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires March 23, 2023

LBP-I-I172697-2

Certification #

December 23, 2019

Issued On

Susan Schulz, Acting Chief

Chemicals and Multimedia Programs Branch

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2021
Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

DR. THOMAS R. MCKEE
AMERISCI RICHMOND
13635 GENITO RD
MIDLOTHIAN, VA 23112

NY Lab Id No: 10984

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	Item 198.1 of Manual
	EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual
Asbestos-Vermiculite-Containing Material	Item 198.8 of Manual

NEW YORK STATE | Department of Health

Serial No.: 61267

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Adelaide
ENVIRONMENTAL HEALTH

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RENOVATION SURVEY
FOR
ASBESTOS-CONTAINING MATERIALS, LEAD-BASED PAINT & PCBs

PERFORMED AT:

Yonkers Armory
2 Quincy Place
Yonkers, New York 10701
Adelaide Project# BA:23168.00-IN
OGS Project# 47477

PREPARED FOR:

Greg Springer
Bergmann: Architects, Engineers, Planners
18 Corporate Woods Blvd., Suite 400
Albany, New York 12211

PREPARED BY:
Jason Fullum
June 15, 2023

REVIEWED BY:



Stephanie A. Soter
President

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1.0 Introduction

1.1 Scope of Work / Project Personnel

Adelaide Environmental Health Associates, Inc. **(Adelaide)** performed an Asbestos, Lead and PCB Survey for Building/Structure Demolition, Renovation, Remodeling and/or Repair, in conformance with ALL Federal, State and Local regulations for Bergmann:

SURVEY LOCATION(S):	Yonkers Armory, 2 Quincy Place, Yonkers, New York 10701
SURVEY DATE(S):	June 6, 2023
SCOPE OF WORK:	Entire building renovation excluding the roof.
SCOPE OF WORK BUILDING/ STRUCTURE PLANS UTILIZED:	As built drawings from 1985 were utilized for the inspection.
CERTIFIED ADELAIDE PERSONNEL:	Jason Fullum (NYS Asbestos Inspector/Cert. #97-20574 and EPA Lead-based Paint Risk Assessor/Cert. #LBP-R-12098-2)
SITE CONTACT(S):	Trentin Reese - Bergmann

1.2 Executive Summary

On June 6, 2023, **Adelaide** inspected the first floor, second floor and exterior areas that will be affected by the proposed scope of work for suspect ACM, LBP and PCBs.

SUSPECT HAZARDOUS MATERIAL	SAMPLE(S)/LAYER(S)/ READING(S) COLLECTED	SAMPLE(S) / HOMOGENEOUS AREA(S) IDENTIFIED POSITIVE
Asbestos-containing Materials (ACM):	56	0
Lead-based Paint (LBP):	31 (plus calibrations)	0
PolyChlorinated Biphenyls (PCB):	6	0

The following indicates assumed materials due to live electric at the time of the inspection.

- PACM electrical wiring insulation and panels, mirror mastic

There are **asbestos materials that will be impacted** by this scope of work as described in section 1.1. These materials are listed in section 2.1.

1.3 Conclusions and Recommendations

The following conclusions and recommendations are prepared by **Adelaide** as per the provided scope of work for Building/Structure Demolition, Renovation, Remodeling and/or Repair. Should the scope of work change, it is recommended that the findings be revisited to determine if additional sampling will be required to satisfy ALL Federal, State and Local regulations.

The materials sampled, as part of this survey, were limited to building materials potential affected by the provided scope of work only. All building materials outside the scope of work that have the potential to be disturbed, impacted, or if the scope of work is to change, are to be presumed asbestos-containing materials (PACM). Identified PACM **must** either be sampled by a licensed NYS Asbestos Inspector and/or abated/removed and disposed of by a licensed NYS Asbestos Abatement Contractor.

1.4 Asbestos-containing Materials (ACM)

- This survey concluded that the materials listed in Section 2.1 are assumed ***positive for asbestos***.

- There are asbestos materials that will be impacted by this scope of work. These materials are listed in section 2.1. Refer to Appendix A for the approximate location of the above materials in the affected scope of work.

- Subpart 56-5(h) of 12 NYCRR Part 56 requires that no demolition, renovation, remodeling, or repair work be commenced by any owner or the owner's agent prior to the completion of asbestos abatement. Asbestos abatement must be performed by an asbestos abatement contractor that maintains a current asbestos handling license and employs NYSDOL/NYCDEP certified asbestos handlers and supervisors. It is recommended that a 12 NYCRR 56 certified Project Monitor oversee abatement activities.

- Subpart 56-5(g) of 12 NYCRR Part 56 specifies requirements for transmittal of asbestos survey information by the owner or owner's agent. (1) One copy of the asbestos survey report shall be sent to the local government entity charged with issuing a permit for such demolition, renovation, remodeling, or repair work under applicable State or local laws. (2) If controlled demolition or pre-demolition activities will be performed, one copy of the asbestos survey report shall be submitted to the appropriate Asbestos Control Bureau district office. (3) One copy of the asbestos survey report must be kept on the construction site throughout the duration of the asbestos project and any associated demolition, renovation, remodeling, or repair project.

1.5 Lead-based Paint (LBP)

- This survey concluded that the readings summarized in Section 2.3 and Appendix E tested ***negative for lead-based paint.***

1.6 PolyChlorinated Biphenyls (PCB)

- This survey concluded that the materials listed in Section 2.4 and Appendix F tested ***negative for PCBs.***

2.0 Summary of Hazardous Materials

2.1 Summary of Identified ACM/PACM

KEY: **ACM** = Materials containing greater than 1% of asbestos; **HA** = Homogeneous Area; **LF** = Linear Feet; **SF** = Square Feet; **PACM** = Presumed Asbestos-containing Materials; **Friable** = ACM capable of being released into air, and which can be crumbled, pulverized, powdered, crushed or exposed by hand-pressure; [A] = Material is considered non-friable solely in an intact and undisturbed state, however, may be rendered friable if pulverized or crumbled while in dry state.

Samples collected by **Adelaide** June 6, 2023

HA	Identified ACM	ACM Location(s)	Approx. Qty.	Condition	Friable? (Yes or No)
PACM	Electrical Wire Insulation and Panels	Throughout	Unknown	Unknown	No

HA	Identified ACM	ACM Location(s)	Approx. Qty.	Condition	Friable? (Yes or No)
PACM	Bathroom Mirror Mastic	Men's and Women's Bathrooms and Locker Rooms	11 Mirrors	Good	No

2.2 Summary of Identified Non-ACM

Samples collected by **Adelaide** June 6, 2023

Identified Non-ACM	Sample Location(s)
12x12 Brown/Red Mottled Floor Tile	2nd Floor
Black Floor Mastic	
2x4 Ceiling Tile – Large and Small Holes	
Debris on Top of Ceiling Tiles	
2x4 Ceiling Tile – Squiggles and Holes	
CMU Mortar	Throughout
4" Black Covebase and Mastic	
Yellow Carpet Mastic	2nd Floor
12x12 Green Mottled Floor Tile	
Drywall Ceiling and Joint Compound	Throughout
12x12 Brown and White Mottled Floor Tile	2nd Floor
12x12 White with Gray Specks Floor Tile	
Terrazzo Shower Base	Locker Rooms
Sealant at Shower	
Exterior Door Glazing Compound	Throughout
Exterior Door Sealant	
Concrete	
Brick Mortar	
Exterior Vertical Sealant	
Pin Mastic on Ductwork	Boiler Room
Wall Tile – Grout and Mudset	Kitchen
Floor Tile – Grout and Mudset	
Exterior Door Caulk	Throughout
Exterior Louver Caulk	

2.3 Summary of Identified LBP

Based on review of the data generated by the Viken Pb200e X-Ray Fluorescence (XRF) Analyzer(s), the following surfaces tested were identified as lead-based, as defined by HUD/EPA (equal to or in excess of 1.0 milligram per square centimeter):

Readings collected by **Adelaide** June 6, 2023

Location of LBP	LBP Component	Substrate	Color	Condition	Readings (mg/cm2)
NO Lead-based Paints identified above HUD/EPA standards of readings collected in reference to the above-mentioned scope of work.					

2.4 Summary of Identified PCB-containing Materials

Samples collected by **Adelaide** June 6, 2023

Sample #	Location / Description	Material Matrix	Color	Substrate	Analytical Result
NO PCB-containing materials were identified above the USEPA 40 CFR 761 threshold of 50 ppm(mg/kg) of samples collected/analyzed in reference to the above-mentioned scope of work.					

2.5 Observations

ASBESTOS-CONTAINING MATERIALS (ACM)
A visual inspection was performed, and homogeneous material types were established based on appearance, color and texture. The findings presented in this report are based upon reasonably available information and observed site conditions at the time the assessment was performed. The findings and conclusions of this report are not meant to be indicative of future conditions at the site and does not warrant against conditions that were not evident from visual observations or historical information obtained from others.

On June 6, 2023, representative bulk sampling was performed on suspect building materials for laboratory analysis and the following is a summary of installed building materials sampled as per the scope of work provided:

- Ceiling Materials – Ceiling Tiles, Drywall, Joint Compound.
- Wall Materials – CMU Mortar, Brick Mortar, Covebase and Mastic, Grout, Mudset
- Flooring Materials – Floor Tiles, Mastics, Grout, Mudset
- Miscellaneous Materials – Terrazzo, Sealants, Glazing Compound, Concrete, Pin Mastic
- Non-suspect Materials (not sampled) – Fiberglass Insulation, Wood, Glass, Metal.

3.0 Asbestos-containing Materials (ACM)

3.1 Field Procedures and Analysis Methodology

Guidelines used for the inspection were established by the U.S. Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, DOC# 560/5-85-024 and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA) and Title 12 NYCRR Part 56-5.1. Field information was organized as per the AHERA concept of a

homogeneous area (HA); that is, suspect Asbestos-containing Materials (ACM) with similar age, appearance, and texture were grouped together, sampled and assessed for condition.

For the purposes of this inspection, suspect ACM has been placed in three material categories: thermal, surfacing, and miscellaneous. 1) Surfacing materials are those that are sprayed on, troweled on or otherwise applied to surfaces for fireproofing, acoustical, or decorative purposes (e.g., wall and ceiling plaster). 2) Thermal materials are those applied to heat pipes or other structural components to prevent heat loss or gain or prevent water condensation (e.g., pipe and fitting insulation, duct insulation, boiler flue). 3) Miscellaneous materials are interior building materials on structural components, structural members or fixtures, such as floor and ceiling tiles, etc. and do not include surfacing material or thermal system insulation.

SURFACING MATERIALS

Surfacing materials were grouped into homogeneous sampling areas. A homogeneous area contains material that is uniform in color and texture and appears identical in every other respect. Materials installed at different times belong to different sampling areas. Homogeneous areas were determined on per floor basis.

The following protocol was used for determining the number of samples to be collected:

- At least three bulk samples were collected from each homogeneous area that is 1,000 square feet or less.
- At least five bulk samples were collected from each homogeneous area that is greater than 1,000 square feet but less than or equal to 5,000 square feet.
- At least seven bulk samples were collected from each homogeneous area that is greater than 5,000 square feet.

THERMAL SYSTEM INSULATION (TSI)

The concept of homogeneous sampling areas applies equally well to thermal insulation as to surfacing material. A "typical" building may contain multiple insulated pipe runs from any combination of the following categories:

- Hot water supply and/or return
- Cold water supply
- Chilled water supply
- Steam supply and/or return
- Roof or system drain

The following protocol was used for determining the number of samples to be collected.

- Collect at least three bulk samples from each homogeneous area of thermal system insulation.
- Collect at least one bulk sample from each homogeneous area of patched thermal system insulation if the patched section is less than 6 linear or square feet.
- In a manner sufficient to determine whether the material is ACM or not ACM, collect a minimum of three bulk samples from each homogeneous insulated mechanical system tee, elbow, and valve.

Bulk samples are not collected from any homogeneous area where the certified inspector has determined that the thermal system insulation is fiberglass, foam glass, or rubber.

MISCELLANEOUS MATERIALS

Miscellaneous materials are grouped into different homogeneous areas and at least two bulk samples are collected from each homogeneous area as per the clarification letter from the EPA and the Professional Abatement Contractors of New York, Inc in November of 2007.

Samples collected were analyzed by a laboratory approved under the New York State Department of Health Environmental Laboratory Approval Program (NYSDOH ELAP). Samples were analyzed in the laboratory by Polarized Light Microscopy (PLM), Polarized Light Microscopy-NOB (PLM-NOB) and/or Quantitative Transmission Electron Microscopy (QTEM), as required. Sample collection and laboratory analysis were conducted in compliance with the requirements of Title 12 NYCRR Part 56-5.1, 29 CFR 1926.1101 and standard EPA & OSHA accepted methods. Samples consisting of multiple layers were separated and analyzed independently in the laboratory.

3.2 Regulatory Guidelines and Requirements for ACM

FEDERAL

In accordance with the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) established National Emission Standards for hazardous Air Pollutants (NESHAP) to protect the public from exposure to airborne pollutants. Asbestos was one of the air pollutants, which was addressed under the NESHAP 40 CFR Part 61. The purpose of asbestos NESHAP regulations is to protect the public health by minimizing the release of asbestos when facilities, which contain ACM, are being renovated or demolished. EPA is responsible for enforcing regulations related to asbestos during renovations and demolition, however, the CAA allows the EPA to delegate this authority to State and Local Agencies. Even after EPA delegate's responsibility to a state or Local agency, EPA retains the authority to oversee agency performance and to enforce NESHAP regulations as appropriate.

NEW YORK STATE

Asbestos in New York State is regulated under the Labor Law Section 906, Part 56 of Title 12 of the Official Compilation of Codes, Rules, and Regulations. Within the department and for the purpose of the Department of Labor, this part (rule) is known as Industrial Code Rule No. 56 (ICR 56) relating to hazards to the public safety and health, during the removal, encapsulation, or disturbance of friable asbestos, or any handling of ACM that may result in the release of asbestos fiber.

As specified in Title 12 NYCRR Part 56-5.1 (h) and (i), "If the building/structure asbestos survey finds that the portion of the building/structure to be demolished, renovated, remodeled, or have repair work contains ACM, PACM, suspect miscellaneous ACM assumed to be ACM, or asbestos material, which is impacted by the work, the owner or the owner's agent shall conduct, or cause to have conducted, asbestos removal performed by a licensed asbestos abatement contractor in conformance with all standards set forth in this Part. All ACM, PACM, suspect miscellaneous ACM assumed to be ACM, or asbestos material impacted by the demolition, renovation, remodeling or repair project shall be removed as per this Part, prior to access or disturbance by other uncertified trades or personnel. No demolition, renovation, remodeling or repair work shall be commenced by any owner or the owner's agent prior to the completion of the asbestos abatement in accordance with the notification requirements of this Part…All building/structure owners and asbestos abatement contractors on a demolition, renovation, remodeling, or repair project, which includes work covered by this part, shall inform all trades on the work site about PACM, ACM, asbestos material and suspect miscellaneous ACM…Bids may be advertised and contracts

awarded for demolition, remodeling, renovation, or repair work, but no work on the current intermediate portion of the project shall commence on the demolition, renovation, remodeling or repair work by any owner or agent prior to completion of all necessary asbestos abatement work for the current intermediate portion of the entire project, in conformance with all standards set forth in this Part." All work conducted should be in accordance with all legal requirements, including but not limited to U.S. Environmental Protection Agency (EPA) National Emissions Standards for Hazardous Air Pollutants (NESHAP) [40 CFR Part 61], New York State Industrial Code Rule 56 Asbestos Regulations (ICR 56) and Chapter 1 of Title 15 of the Rules of the City of New York Regulations, as applicable. Advance notification of the asbestos project to the USEPA, NYSDOL, and NYCDEP may be required.

CONCEALED ACM

In addition to the ACMs identified at the site, there is a possibility that concealed suspect ACM may exist at the building/structure. As such, if any concealed suspect ACM is encountered during future construction related activities, the work should immediately stop. Prior to resuming the work, the suspect ACM should either be 1) Sampled by an appropriately-certified asbestos professional and submitted to an Approved NYSDOH ELAP laboratory for asbestos analysis or 2) Presumed to be ACM (PACM) and removed by a licensed asbestos abatement contractor for disposal in accordance with all applicable regulations.

4.0 Lead-based Paint (LBP)

4.1 Applicable Standards/Guidelines for LBP

The U.S Department of Housing and Urban Development (HUD) defines the action level for lead-based paint as a lead content equal to or greater than 1.0 milligrams of lead per square centimeter of painted surface (≥1.0 mg Pb/cm^2) when measured with an XRF analyzer or 0.5 percent by weight when chemically tested. This definition is described in the HUD "Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing, September 1990". The state of New York's definition of the action level for lead-based paint is consistent with the level established by HUD.

Please note that although the HUD defines lead-based paint as paint having lead concentrations equal or greater than 1.0 mg/cm2, the Occupational Safety and Health Administration (OSHA) considers any concentration of lead in paint to be lead-containing paint. Regardless of the lead concentrations in paint, the contractor shall comply with 29 CFR 1926.62, OSHA regulations, and take precautionary measures for dust control and limit employee exposure to lead dust during the renovations.

Painted surfaces that would be impacted by planned activities such as drilling, cutting, scrapping, etc. and create dust should be properly addressed by following safe work practices, good housekeeping procedures and/or following proper abatement procedures. Grinding and sanding of paint without HEPA filter exhaust, open flame gas fired torch, unconfined abrasive blasting, and chemical strippers containing methylene chloride or other human carcinogenic chemicals are not recommended.

The Federal Resource Conservation and Recovery Act (RCRA) regulation governs the handling, transportation, and disposal of hazardous materials. Every demolition/renovation debris generator has the responsibility to determine whether the debris exhibits one or more of the characteristic wastes listed in subpart C of 40 CFR Part 261. In the case of demolition debris, lead in LBP is a characteristic waste, and therefore, it is the responsibility of the renovation/demolition debris generator to characterize the waste

prior to its disposal and, if found to be hazardous waste as defined by Federal Statutes, to be properly handled and disposed.

Metal objects painted with LBP are exempt from disposal regulations applicable to lead, provided they are properly recycled. All metal objects that are painted with LBP should be sent to a certified recycling facility.

This report is not Lead-based Paint abatement specification and should not be used for specifying removal methods or techniques.

4.2 XRF Information

Viken Pb200e X-Ray Fluorescence (XRF) Analyzer(s) were used to survey the building/structure or portion thereof identified to be demolished, renovated, remodeled or repaired for the presence of LBP. The Viken Pb200e XRF Analyzer(s) are using a sealed source of Co-57 with 6mCi sources, meeting HUD requirements for the analysis of paint films. During the analysis, the intensity of the x-rays is converted by the instrument's internal software into an estimate of the concentration of lead in the substance being analyzed. The results are interpreted as concentrations of lead in milligrams per square centimeter. This device is a field-screening tool, used to collect multiple readings in a short period of time. The method of measurement is based on spectrometric analysis of lead x-ray fluorescence within a controlled depth of interrogation. The reading is an estimate of lead content in all layers of paint. The results are displayed in milligrams per square centimeter (mg/cm2). The device(s) used for this inspection were the Viken Pb200e X-Ray Fluorescence (XRF) Analyzer(s) Serial Number 2104, Source date 4/1/23, Serial number 2231, Source date 5/15/22, Serial number 2595, Source date 2/15/23 and/or Serial number 2901, Source date 2/15/23.

5.0 PolyChlorinated Biphenyls (PCB)

5.1 Background and Protocol for PCBs

PolyChlorinated Biphenyls (PCB) are a group of manmade chemicals. PCBs were widely used in building materials and electrical products in the past. The U.S. Environmental Protection Agency banned the manufacturing and certain uses of PCBs in 1978, but buildings constructed or renovated between 1950 and 1978 may still have building materials and electrical products that contain PCBs. Examples of products that may contain PCBs include caulk, paint, glues, plastics, fluorescent lighting ballasts, transformers and capacitors.

PCBs are currently prohibited from being used in caulk and other commodities (U.S. EPA, 40 CFR 761). However, prior to 1977, PCBs were present in some caulking materials used in the construction of schools and other buildings. Studies have shown that concentrations of PCB can exceed 1% (10,000 ppm) by weight in some caulk materials. An investigation of 24 buildings in the Greater Boston Area revealed that one-third of the buildings tested (8 of 24) contained caulking materials with polychlorinated biphenyl (PCB) content exceeding 50 ppm by weight with an average concentration of 15,600 ppm or 1.5% (Herrick et al., 2004). These buildings included schools and other public buildings.

The U.S. EPA regulates the disposal of caulk, as well as soil and other materials contaminated with PCBs from caulk, if the concentration of PCBs exceeds 50 ppm. Such materials must be disposed at an appropriate approved or permitted facility.

U.S. EPA regulation 40 CFR 761 defines "PCB remediation waste" to include contaminated soil, and specifies a clean-up level of <1ppm without further conditions for unrestricted use in "high occupancy areas" (i.e., areas where individuals may be present for 335 hours or more per year). PCB caulk is defined as a PCB bulk product waste, and its disposal is subject to U.S. EPA regulations under the Toxic Substances Control Act (40 CFR761.62).

This protocol has been developed in consultation with the New York State Department of Health, Division of Environmental Health Assessment, Bureau of Toxic Substance Assessment to address concerns about properly managing caulk containing PCBs that will be disturbed during building renovation and maintenance.

CAULK SAMPLE COLLECTION

Buildings constructed or renovated between 1950 and 1977 have a potential to contain PCBs in existing caulk. Representative samples of caulking materials from these buildings prior to renovation or demolition work should be tested to determine whether the caulk is contaminated with PCBs. Professional judgement should be used to design the sampling plan for characterizing caulk throughout the building. The consultant should pay particular attention to construction and maintenance records and to the appearance of caulking materials (likenesses and differences). Samples should be taken from window frames or expansion joints that have not been repaired or replaced since 1977. Depending on specific information provided in the workplan developed by the project manager, such as window placement, compositing of some caulk samples might be appropriate. Caulk from different time periods or that have a different appearance should not be composited together.

It is important to note that caulk used during the time period of interest may also contain asbestos or lead. Therefore, the work plan should include testing, handling and disposal requirements appropriate for such regulated materials.

SOIL SAMPLE COLLECTION

Buildings constructed or renovated between 1950 and 1977, which have undergone further renovation after 1977, may have residual PCB contamination in adjacent soils. An adequate representation of surface soils should be tested to assess the potential for residual PCB contamination.

When designing a representative soil sampling plan, the likelihood of soil contamination from deteriorated or deteriorating caulk should be considered. Caulk that has in the past dried out and fallen to the ground is the most important source of soil contamination. Thus, sampling should include soil beneath windows where caulk has obviously deteriorated or been replaced because of previous deterioration. Areas subject to the stress of sun and prevailing weather (typically the southern and western side of each structure) should be included for sampling. These samples would provide a conservative evaluation of soil conditions due to an increased potential for material failure, possibly resulting in contamination of soil. Also, if earlier renovation or demolition work may have stockpiled potentially contaminated caulk in other school areas, the school should consider having soils in those areas tested as well.

Soil sampling should focus on areas of the building where ”banks” or “gangs” of windows exist/were replaced and areas of the structure where large expansion joints are located. This would provide a conservative evaluation of potential soil contamination and permit efficient sampling.

Any obvious pieces of caulk encountered during the collection of soil samples should be removed from the soil, categorized (with respect to location and depth) and treated as a separate potential sample.

Depth – At each soil sample location, soil should be collected in depth intervals of 0-2 inches, 2-6 inches and 6-12 inches. The surface soil sample (0-2 inches) should be collected from below the vegetative surface layer, if present.

Distance from Structure – Samples should be collected within 1 foot of the building and 5 feet from the building.

Samples should be collected in a manner that prevents cross-contamination. Augers or driven core samplers should be avoided, as any caulk caught on the edge of this type of tool could be driven to lower intervals. Using a designated trowel for each sample location and each interval of depth is encouraged. If the sampling tool is field cleaned between samples, do so in a manner that does not add solvent contamination to the environment.

NOTE
Sampling was performed by **Adelaide** in compliance with protocols outlined by New York State Education Department (NYSED) and USEPA 40 CFR 761, as described above. Only one sample per homogeneous area was required for analysis of suspect PCB-containing materials. Bulk sample(s) were properly packaged and forwarded, with associated Chain of Custody (COC), to York Analytical Laboratories, Inc., for analysis using method SW846-3550B/8082. The analysis will determine if the suspect material will be classified as PCB-containing at or above 50 ppm or mg/kg as per the EPA regulations. Copies of the analytical results are contained within attached appendices for review.

6.0 General Discussion

All construction personnel as well as individuals who have access to locations where asbestos-containing materials (ACM), lead-based paints (LBP) and/or polychlorinated biphenyls (PCB) exists should be informed of its presence and the proper work practices in these areas. Conspicuous labeling of all ACM is suggested to ensure personnel is adequately informed. Personnel should be informed not to rest, lean or store material or equipment on or near these surfaces and not to cut, saw, drill, sand or disturb ACM. All removal, disturbance, and repair of ACM should be performed in compliance with Title 12 NYCRR Part 56 by persons properly trained to handle ACM. Facility custodial and maintenance personnel should receive training commensurate with their work activities; as defined in 29 CFR 1910.1001.

7.0 Disclaimers

Adelaide certifies that the information contained within this report is based solely upon site observations and the results of laboratory analysis for samples collected during this survey/assessment. These observations and results are time dependent, subject to changing site conditions and revisions to Federal, State and Local regulations. **Adelaide** warrants that these findings have been promulgated after being prepared in general accordance with generally accepted practices in the abatement industries. **Adelaide** also recognizes that inspection laboratory data is not usually sufficient to make all abatement and management decisions. No other warranties are expressed or implied.

The materials sampled, as part of this survey, were limited to building materials potential affected by the provided scope of work only. All building materials outside the scope of work that have the potential to be disturbed, impacted, or if the scope of work is to change, are to be presumed asbestos-containing materials (PACM). Identified PACM **must** either be sampled by a licensed NYS Asbestos Inspector and/or abated/removed and disposed of by a licensed NYS Asbestos Abatement Contractor.

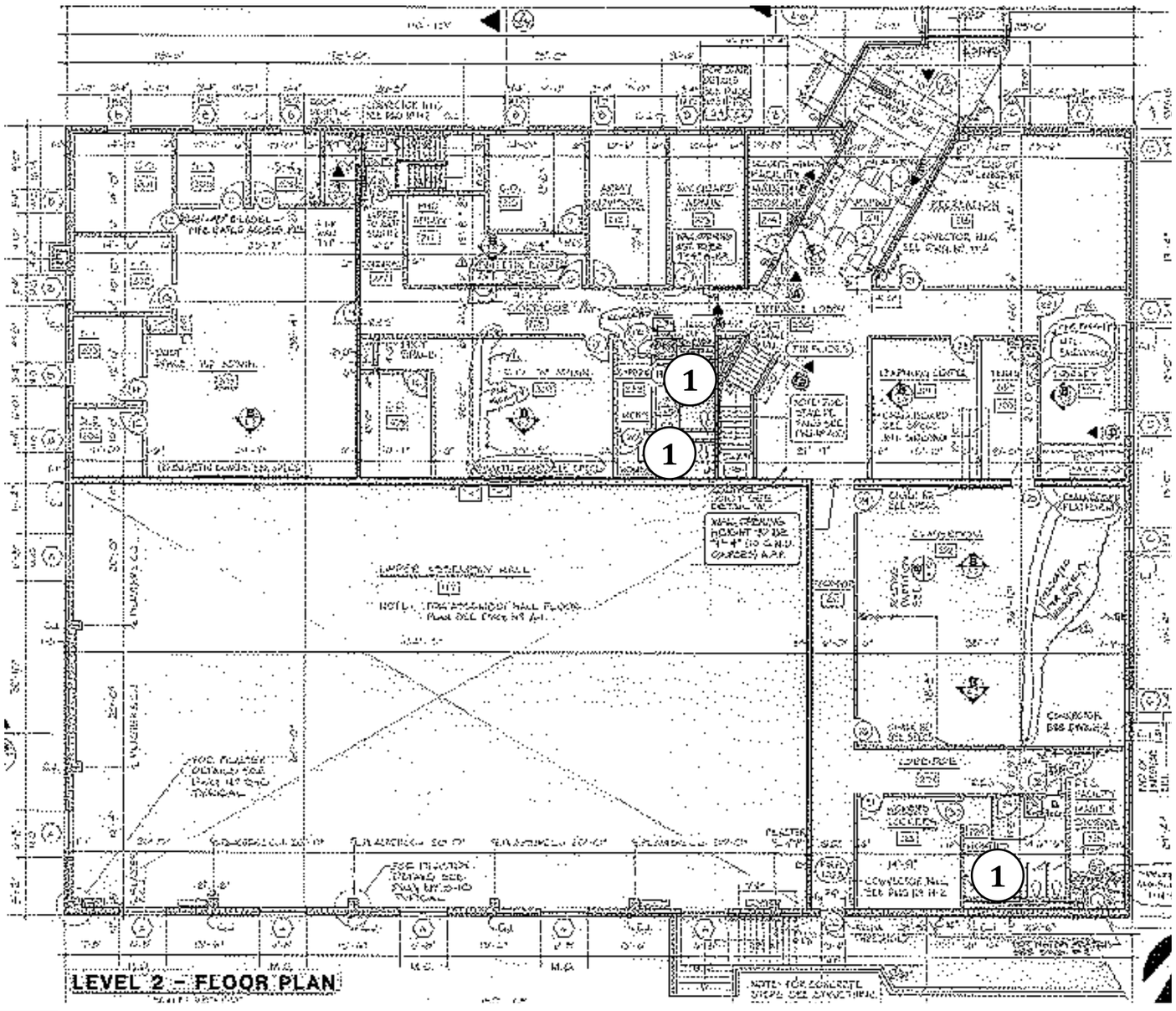
Due to the potential for concealed Asbestos-containing Materials (ACM) and/or other regulated materials, this report should not be construed to represent all ACM and/or regulated materials within the site(s). All quantities of ACM and/or other regulated materials identified, and all dimensions listed within this report are approximate and should be verified On-site.

This report is generated for the exclusive use of the client and is not designed to serve as a specification for abatement. The owner is strongly encouraged to contract with a consultant having a current Asbestos Project Designer Certificate as issued by New York State Department of Labor for the preparation of contract specifications, work plans, and/or drawings prior to requesting bids for the abatement or removal of the materials identified in this report.

NYSDOH issued an Interim Guidance Letter, on July 9, 2013, which outlined the approved testing alternative for materials containing vermiculite. Specifically, "...Where TSI, surfacing materials, or other PACM or miscellaneous suspect ACM contain greater than 10% vermiculite, Item 198.6 may be used to evaluate the asbestos content of the material; provided, however, that any test results using this method must be reported with the following conspicuous disclaimer: *"This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."* On July 22, 2014, NYSDOH issued a Regulatory Guidance Letter outlining the new approved analytical methods for testing sprayed-on fireproofing (SOFP) that contains vermiculite. NYSDOH authorized the use of ***two*** analytical methods to evaluate the asbestos content of SOFP that contains vermiculite. As per NYSDOH Guidelines, *"After October 31, 2014, one of the new methods **must** be used to test SOF-V, regardless of the percent of vermiculite."* On May 6, 2016, NYSDOH issued a Regulatory Guidance Letter outlining the new protocol for analytical procedure for surfacing materials (ie. plaster, stucco, etc.) that contain vermiculite. As per NYSDOH Guidelines, "*The original July 2013 and July 2014 letters addressed SOF-V only. Both NYS DOH's Item 198.8 and RJ Lee Group Method 055 shall now be applied to test for vermiculite in other Surfacing Material (SM) as defined in 12 NYCRR Part 56 (NYS Industrial Code Rule 56).*"

APPENDIX A

ACM LOCATION MAP(S)



ACM LEGEND: (see report for details)	
1	Assumed Mirror Mastic
PACM	Electrical Wire and Panels Throughout

Second Floor Plans - Asbestos Locations

Drawing Not to Scale

Adelaide ENVIRONMENTAL HEALTH
1511 Route 22
Brewster, NY 10509
Phone: (845) 278-7710
Fax: (845) 278-7750

CLIENT:
Greg Springer
Bergmann: Architects, Engineers, Planners
18 Corporate Woods Blvd., Suite 400
Albany, New York 12211

(Client) Project #

SURVEY LOCATION:
Yonkers Armory
2 Quincy Place
Yonkers, New York 10701

DATE: 6/13/2023

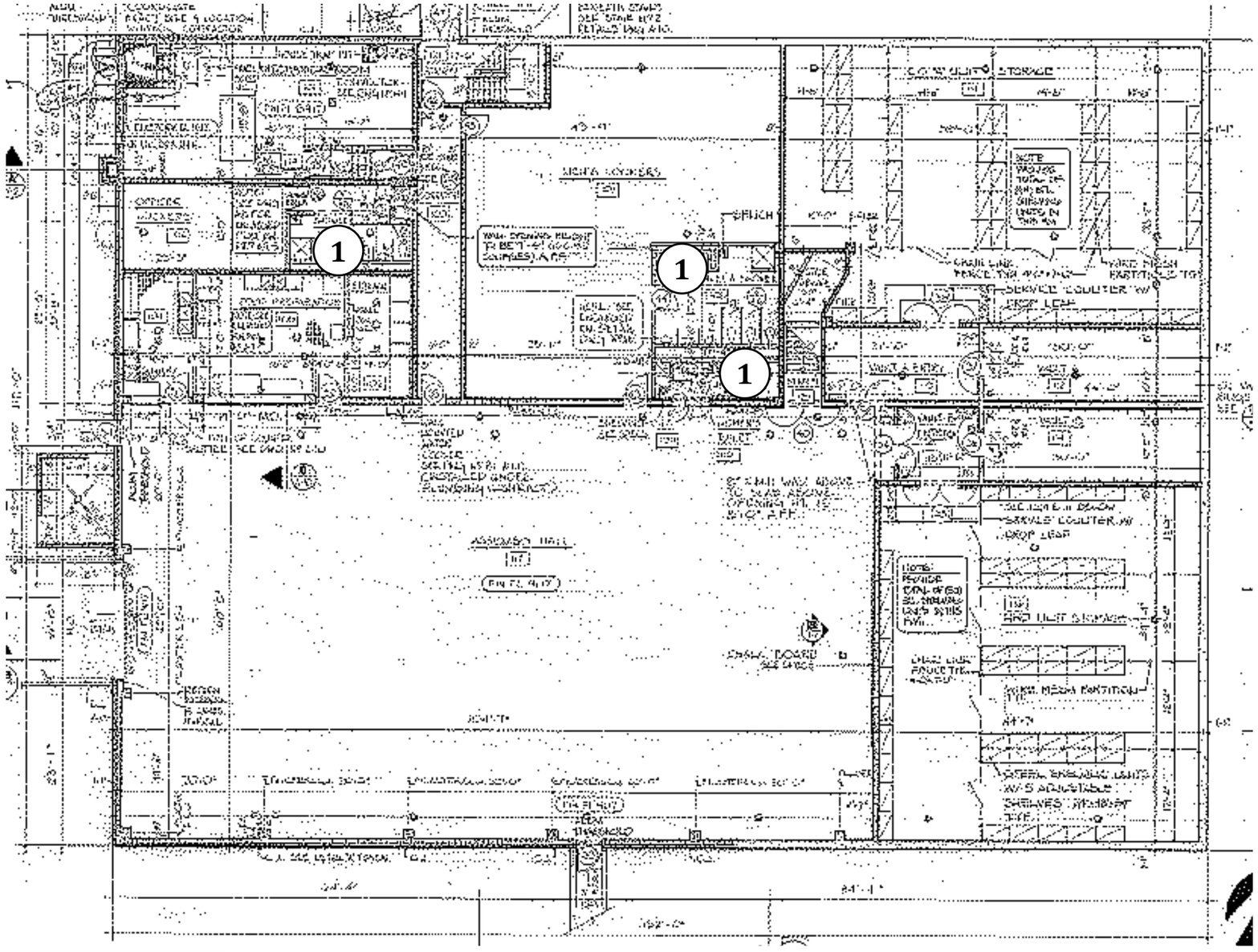
DRAWING VERSION: No. 1

ISSUED FOR:
Asbestos, Lead & PCB Survey

ADELAIDE PROJECT NO.:
BA:23168.00-IN

DRAWING PREPARED BY:
JPF

ASB-01



ACM LEGEND: (see report for details)	
1	Assumed Mirror Mastic
PACM	Electrical Wire and Panels Throughout

First Floor Plans - Asbestos Locations

Drawing Not to Scale

Adelaide ENVIRONMENTAL HEALTH
1511 Route 22
Brewster, NY 10509
Phone: (845) 278-7710
Fax: (845) 278-7750

CLIENT:
Greg Springer
Bergmann: Architects, Engineers, Planners
18 Corporate Woods Blvd., Suite 400
Albany, New York 12211

(Client) Project #

SURVEY LOCATION:
Yonkers Armory
2 Quincy Place
Yonkers, New York 10701

DATE: 6/13/2023

DRAWING VERSION: No. 1

ISSUED FOR:
Asbestos, Lead & PCB Survey

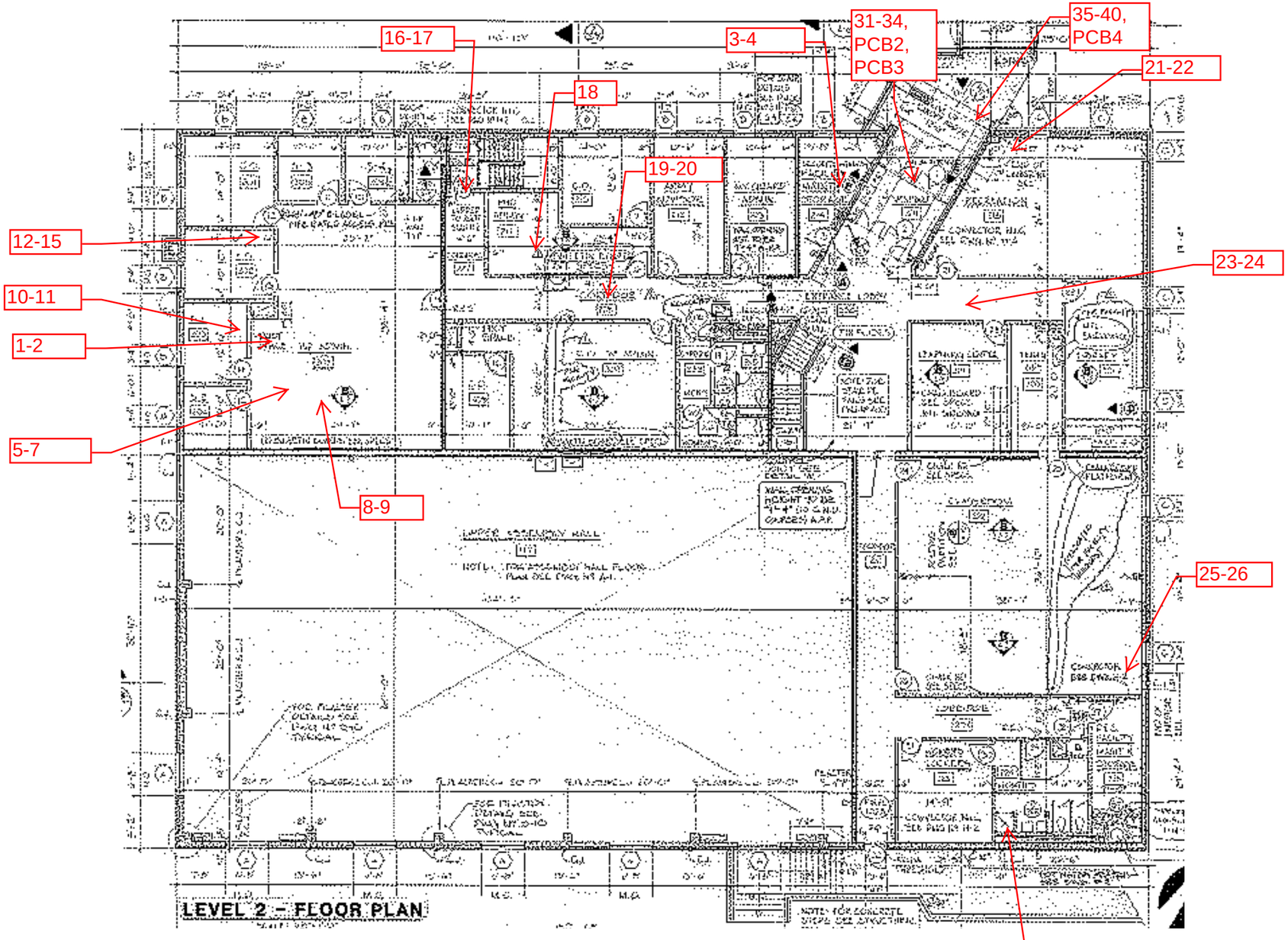
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BA:23168.00-IN

DRAWING PREPARED BY:
JPF

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APPENDIX B

SAMPLE LOCATION MAP(S)



Second Floor Plans - Sample Locations

Drawing Not to Scale

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CLIENT:
Greg Springer
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18 Corporate Woods Blvd., Suite 400
Albany, New York 12211

(Client) Project #

SURVEY LOCATION:
Yonkers Armory
2 Quincy Place
Yonkers, New York 10701

DATE: 6/13/2023

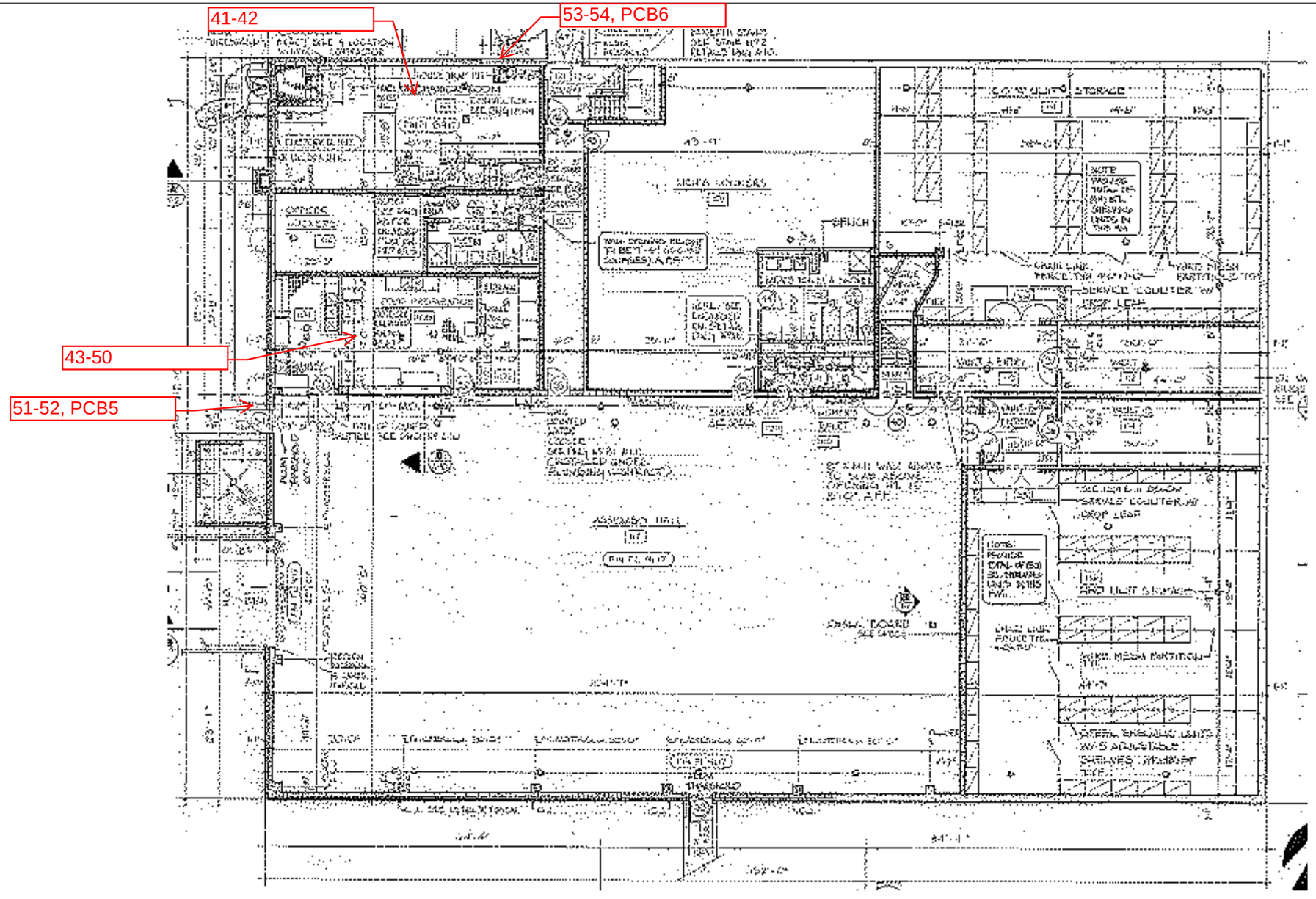
DRAWING VERSION: No. 1

ISSUED FOR:
Asbestos, Lead & PCB Survey

ADELAIDE PROJECT NO.:
BA:23168.00-IN

DRAWING PREPARED BY:
JPF

SL-01



First Floor Plans - Sample Locations

Drawing Not to Scale

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CLIENT:
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(Client) Project #

SURVEY LOCATION:
Yonkers Armory
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Yonkers, New York 10701

DATE: 6/13/2023

DRAWING VERSION: No. 1

ISSUED FOR:
Asbestos, Lead & PCB Survey

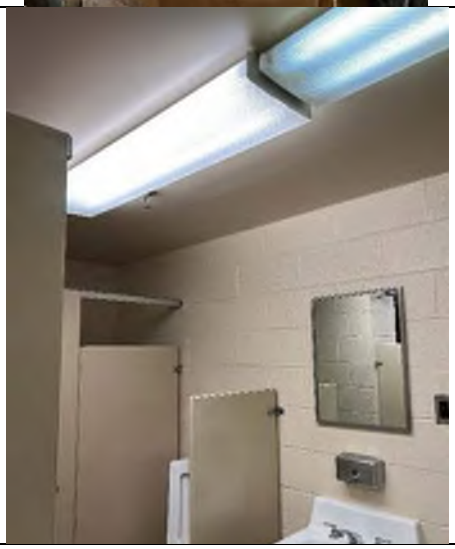
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BA:23168.00-IN

DRAWING PREPARED BY:
JPF

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APPENDIX C

ACM PHOTO(S)

PACM Electrical Wire Insulation and Panels	
PACM Electrical Wire Insulation and Panels	
PACM Mirror Mastic	

APPENDIX D

ASBESTOS ANALYTICAL RESULTS

Table I
Summary of Bulk Asbestos Analysis Results

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01	1	1	0.226	17.4	81.7	0.9	NAD	NAD
Location: 2nd Floor - Room 207 - 12 x 12 F.T. - Brown / Red Mottled								
02	2	1	0.195	16.3	82.6	1.0	NAD	NAD
Location: 2nd Floor - Room 207 - 12 x 12 F.T. - Brown / Red Mottled								
03	3	2	0.142	79.8	15.9	4.3	NAD	NAD
Location: 2nd Floor - Room 214 - 12 x 12 F.T. - Black Mastic								
04	4	2	0.157	80.5	13.2	6.3	NAD	NAD
Location: 2nd Floor - Room 214 - 12 x 12 F.T. - Black Mastic								
05	5	3	0.188	24.9	12.0	63.1	NAD	NAD
Location: 2nd Floor - Room 214 - 2 x 4 C.T. - Large + Small Holes								
06	6	3	0.132	26.0	22.1	51.9	NAD	NAD
Location: 2nd Floor - Room 214 - 2 x 4 C.T. - Large + Small Holes								
07	7	4	0.227	55.4	18.6	26.0	NAD	NAD
Location: 2nd Floor - Room 214 - Debris On Top Of C.T.								
08	8	5	0.137	27.2	25.5	47.3	NAD	NAD
Location: 2nd Floor - Room 214 - 2 x 4 C.T. - Squiggles + Holes								
09	9	5	0.159	28.1	21.5	50.4	NAD	NAD
Location: 2nd Floor - Room 214 - 2 x 4 C.T. - Squiggles + Holes								
10	10	6	----	----	----	----	NAD	NA
Location: 2nd Floor - Room 214 - CMU Mortar								
11	11	6	----	----	----	----	NAD	NA
Location: 2nd Floor - Room 214 - CMU Mortar								
12L1	12	7	0.222	62.5	37.0	0.5	NAD	NAD
Location: 2nd Floor - Room 202 - Cove Base - 4" Black								
12L2	12	7	0.222	45.9	49.1	5.0	NAD	NAD
Location: 2nd Floor - Room 202 - Cove Base - 4" Black Mastic								
13L1	13	7	0.212	62.4	37.1	0.5	NAD	NAD
Location: 2nd Floor - Room 202 - Cove Base - 4" Black								
13L2	13	7	0.282	45.7	46.4	7.9	NAD	NAD
Location: 2nd Floor - Room 202 - Cove Base - 4" Black Mastic								
14	14	8	0.234	57.9	4.8	37.4	NAD	NAD
Location: 2nd Floor - Room 202 - Yellow Carpet Mastic								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
15	15	8	0.161	57.4	24.3	18.3	NAD	NAD
Location: 2nd Floor - Room 202 - Yellow Carpet Mastic								
16	16	9	0.265	17.6	79.9	2.5	NAD	NAD
Location: 2nd Floor - Hallway - 12 x 12 F.T. - Green Mottled								
17	17	9	0.280	16.9	82.3	0.8	NAD	NAD
Location: 2nd Floor - Hallway - 12 x 12 F.T. - Green Mottled								
18	18	10	0.423	26.8	11.1	62.1	NAD	NAD
Location: 2nd Floor - Room 211 - Debris Above C.T.								
19	19	11	----	----	----	----	NAD	NA
Location: 2nd Floor - Hallway - Drywall Ceiling								
20	20	11	----	----	----	----	NAD	NA
Location: 2nd Floor - Hallway - Drywall Ceiling								
21	21	12	0.239	20.8	61.7	17.5	NAD	NAD
Location: 2nd Floor - Room 218 - 12 x 12 F.T. - Brown + White Mottled								
22	22	12	0.260	19.8	59.2	21.0	NAD	NAD
Location: 2nd Floor - Room 218 - 12 x 12 F.T. - Brown + White Mottled								
23	23	13	----	----	----	----	NAD	NA
Location: 2nd Floor - Hallway - Joint Compound								
24	24	13	----	----	----	----	NAD	NA
Location: 2nd Floor - Hallway - Joint Compound								
25	25	14	0.208	19.6	72.6	7.8	NAD	NAD
Location: 2nd Floor - Room 222 - 12 x 12 F.T. - White W/ Gray Specks								
26	26	14	0.244	20.7	60.9	18.5	NAD	NAD
Location: 2nd Floor - Room 222 - 12 x 12 F.T. - White W/ Gray Specks								
27	27	15	----	----	----	----	NAD	NA
Location: 2nd Floor - Rm. 223 - Womens Locker - Terrazzo Shower Base								
28	28	15	----	----	----	----	NAD	NA
Location: 2nd Floor - Rm. 223 - Womens Locker - Terrazzo Shower Base								
29	29	16	0.141	32.0	65.3	2.7	NAD	NAD
Location: 2nd Floor - Rm. 223 - Womens Locker - Sealant At Shower								
30	30	16	0.140	30.7	67.0	2.4	NAD	NAD
Location: 2nd Floor - Rm. 223 - Womens Locker - Sealant At Shower								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
31	31	17	0.217	29.3	67.7	3.0	NAD	NAD
Location: 2nd Floor - Entrance Doors - Glazing Compound								
32	32	17	0.237	29.2	67.2	3.6	NAD	NAD
Location: 2nd Floor - Entrance Doors - Glazing Compound								
33	33	18	0.187	44.1	53.5	2.4	NAD	NAD
Location: 2nd Floor - Entrance Doors - Exterior Sealant								
34	34	18	0.157	44.9	52.6	2.6	NAD	NAD
Location: 2nd Floor - Entrance Doors - Exterior Sealant								
35	35	19	----	----	----	----	NAD	NA
Location: 2nd Floor - Concrete								
36	36	19	----	----	----	----	NAD	NA
Location: 2nd Floor - Concrete								
37	37	20	----	----	----	----	NAD	NA
Location: 2nd Floor - Brick Mortar								
38	38	20	----	----	----	----	NAD	NA
Location: 2nd Floor - Brick Mortar								
39	39	21	0.171	65.1	26.9	8.0	NAD	NAD
Location: 2nd Floor - Exterior Vertical Sealant								
40	40	21	0.184	65.2	25.9	8.9	NAD	NAD
Location: 2nd Floor - Exterior Vertical Sealant								
41	41	22	0.124	72.9	11.4	15.7	NAD	NAD
Location: 1st Floor - Boiler Room - Pin Mastic On Duct								
42	42	22	0.182	73.9	8.4	17.7	NAD	NAD
Location: 1st Floor - Boiler Room - Pin Mastic On Duct								
43	43	23	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Wall Tile - Grout								
44	44	23	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Wall Tile - Grout								
45	45	24	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Wall Tile - Mudset								
46	46	24	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Wall Tile - Mudset								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
47	47	25	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Floor Tile - Grout								
48	48	25	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Floor Tile - Grout								
49	49	26	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Floor Tile - Mudset								
50	50	26	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Floor Tile - Mudset								
51	51	27	0.187	62.0	27.5	10.6	NAD	NAD
Location: 1st Floor - Exterior - Door Caulk								
52	52	27	0.206	64.6	22.3	13.1	NAD	NAD
Location: 1st Floor - Exterior - Door Caulk								
53	53	28	0.170	60.7	11.7	27.6	NAD	NAD
Location: 1st Floor - Exterior - Louver Caulk								
54	54	28	0.103	59.9	5.8	34.2	NAD	NAD
Location: 1st Floor - Exterior - Louver Caulk								

Analyzed by: Gabriella Morozov 

Date: 6/8/2023

Reviewed by: Gabriella Morozov 

**Quantitative Analysis (Semi/Full); Bulk Asbestos Analysis - PLM by Appd E to Subpt E, 40 CFR 763 or NYSDOH ELAP 198.1 for New York friable samples or NYSDOH ELAP 198.6 for New York NOB samples; TEM (Semi/Full) by EPA 600/R-93/116 (or NYSDOH ELAP 198.4; for New York samples). Analysis using Hitachi, Model H7000-Noran 7 System, Microscope, Serial #: 747-05-06. NAD = no asbestos detected during a quantitative analysis; NA = not analyzed; Trace = <1%; (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only; Qualitative Analysis: Asbestos analysis results of "Present" or "NVA = No Visible Asbestos" represents results for Qualitative PLM or TEM Analysis only (no accreditation coverage available from any regulatory agency for qualitative analyses): NVLAP (PLM) 200546-0, NYSDOH ELAP Lab 11480, NJ Lab ID #NY031.

Warning Note: PLM limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris for which PLM evaluation is recommended (i.e. soils and other heterogenous materials).

AmeriSci New York
117 EAST 30TH ST.
NEW YORK, NY 10016
TEL: (212) 679-8600 • FAX: (212) 679-3114

PLM Bulk Asbestos Report

Adelaide Environmental Health
Attn: John Soter
1511 Rte. 22, Suite C24

Brewster, NY 10509

Date Received 06/07/23
Date Examined 06/08/23
ELAP # 11480

AmeriSci Job # 223061619
P.O. #
Page 1 **of** 10

RE: OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1	223061619-01	***No***	NAD
1	**Location:** 2nd Floor - Room 207 - 12 x 12 F.T. - Brown / Red Mottled		(by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Brown/Red, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.9%			
2	223061619-02	***No***	NAD
1	**Location:** 2nd Floor - Room 207 - 12 x 12 F.T. - Brown / Red Mottled		(by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Brown/Red, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 1%			
3	223061619-03	***No***	NAD
2	**Location:** 2nd Floor - Room 214 - 12 x 12 F.T. - Black Mastic		(by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 4.3%			
4	223061619-04	***No***	NAD
2	**Location:** 2nd Floor - Room 214 - 12 x 12 F.T. - Black Mastic		(by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 6.3%			
5	223061619-05	***No***	NAD
3	**Location:** 2nd Floor - Room 214 - 2 x 4 C.T. - Large + Small Holes		(by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 63.1%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
6 3	223061619-06 **Location:** 2nd Floor - Room 214 - 2 x 4 C.T. - Large + Small Holes	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 51.9%			
7 4	223061619-07 **Location:** 2nd Floor - Room 214 - Debris On Top Of C.T.	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Black, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 26%			
8 5	223061619-08 **Location:** 2nd Floor - Room 214 - 2 x 4 C.T. - Squiggles + Holes	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 47.3%			
9 5	223061619-09 **Location:** 2nd Floor - Room 214 - 2 x 4 C.T. - Squiggles + Holes	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 50.4%			
10 6	223061619-10 **Location:** 2nd Floor - Room 214 - CMU Mortar	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
11 6	223061619-11 **Location:** 2nd Floor - Room 214 - CMU Mortar	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
12 7	223061619-12L1 **Location:** 2nd Floor - Room 202 - Cove Base - 4" Black	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.5%			
12 7	223061619-12L2 **Location:** 2nd Floor - Room 202 - Cove Base - 4" Black Mastic	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Cream, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 5%			
13 7	223061619-13L1 **Location:** 2nd Floor - Room 202 - Cove Base - 4" Black	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.5%			
13 7	223061619-13L2 **Location:** 2nd Floor - Room 202 - Cove Base - 4" Black Mastic	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Cream, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 7.9%			
14 8	223061619-14 **Location:** 2nd Floor - Room 202 - Yellow Carpet Mastic	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 37.4%			
15 8	223061619-15 **Location:** 2nd Floor - Room 202 - Yellow Carpet Mastic	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 18.3%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
16 9	223061619-16 **Location:** 2nd Floor - Hallway - 12 x 12 F.T. - Green Mottled	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Green, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 2.5%			
17 9	223061619-17 **Location:** 2nd Floor - Hallway - 12 x 12 F.T. - Green Mottled	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Green, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.8%			
18 10	223061619-18 **Location:** 2nd Floor - Room 211 - Debris Above C.T.	***No***	NAD [1] (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Black, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 62.1%			
19 11	223061619-19 **Location:** 2nd Floor - Hallway - Drywall Ceiling	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray/Brown, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 15%, Non-fibrous 85%			
20 11	223061619-20 **Location:** 2nd Floor - Hallway - Drywall Ceiling	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray/Brown, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 15%, Non-fibrous 85%			
21 12	223061619-21 **Location:** 2nd Floor - Room 218 - 12 x 12 F.T. - Brown + White Mottled	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 17.5%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
22 12	223061619-22 **Location:** 2nd Floor - Room 218 - 12 x 12 F.T. - Brown + White Mottled	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 21%			
23 13	223061619-23 **Location:** 2nd Floor - Hallway - Joint Compound	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
24 13	223061619-24 **Location:** 2nd Floor - Hallway - Joint Compound	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
25 14	223061619-25 **Location:** 2nd Floor - Room 222 - 12 x 12 F.T. - White W/ Gray Specks	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 7.8%			
26 14	223061619-26 **Location:** 2nd Floor - Room 222 - 12 x 12 F.T. - White W/ Gray Specks	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 18.5%			
27 15	223061619-27 **Location:** 2nd Floor - Rm. 223 - Womens Locker - Terrazzo Shower Base	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: White/Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
28 15	223061619-28 **Location:** 2nd Floor - Rm. 223 - Womens Locker - Terrazzo Shower Base	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: White/Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
29 16	223061619-29 **Location:** 2nd Floor - Rm. 223 - Womens Locker - Sealant At Shower	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 2.7%			
30 16	223061619-30 **Location:** 2nd Floor - Rm. 223 - Womens Locker - Sealant At Shower	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 2.4%			
31 17	223061619-31 **Location:** 2nd Floor - Entrance Doors - Glazing Compound	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 3%			
32 17	223061619-32 **Location:** 2nd Floor - Entrance Doors - Glazing Compound	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 3.6%			
33 18	223061619-33 **Location:** 2nd Floor - Entrance Doors - Exterior Sealant	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 2.4%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
34 18	223061619-34 **Location:** 2nd Floor - Entrance Doors - Exterior Sealant	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 2.6%			
35 19	223061619-35 **Location:** 2nd Floor - Concrete	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
36 19	223061619-36 **Location:** 2nd Floor - Concrete	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
37 20	223061619-37 **Location:** 2nd Floor - Brick Mortar	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
38 20	223061619-38 **Location:** 2nd Floor - Brick Mortar	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
39 21	223061619-39 **Location:** 2nd Floor - Exterior Vertical Sealant	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 8%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
40 21	223061619-40 **Location:** 2nd Floor - Exterior Vertical Sealant	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 8.9%			
41 22	223061619-41 **Location:** 1st Floor - Boiler Room - Pin Mastic On Duct	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 15.7%			
42 22	223061619-42 **Location:** 1st Floor - Boiler Room - Pin Mastic On Duct	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 17.7%			
43 23	223061619-43 **Location:** 1st Floor - Kitchen - Wall Tile - Grout	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
44 23	223061619-44 **Location:** 1st Floor - Kitchen - Wall Tile - Grout	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
45 24	223061619-45 **Location:** 1st Floor - Kitchen - Wall Tile - Mudset	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
46 24	223061619-46 **Location:** 1st Floor - Kitchen - Wall Tile - Mudset	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
47 25	223061619-47 **Location:** 1st Floor - Kitchen - Floor Tile - Grout	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
48 25	223061619-48 **Location:** 1st Floor - Kitchen - Floor Tile - Grout	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
49 26	223061619-49 **Location:** 1st Floor - Kitchen - Floor Tile - Mudset	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
50 26	223061619-50 **Location:** 1st Floor - Kitchen - Floor Tile - Mudset	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
51 27	223061619-51 **Location:** 1st Floor - Exterior - Door Caulk	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 10.6%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
52 27	223061619-52 **Location:** 1st Floor - Exterior - Door Caulk	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 13.1%			
53 28	223061619-53 **Location:** 1st Floor - Exterior - Louver Caulk	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 27.6%			
54 28	223061619-54 **Location:** 1st Floor - Exterior - Louver Caulk	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 34.2%			

Reporting Notes:

(1) Analysis Results For Soil, Dust, Or Debris May Be Highly Variable Because Of The Heterogeneous Nature Of These Samples

Analyzed by: Kensen Caro
Date: 6/8/2023

Reviewed by: Gabriella Morozov

*NAD/NSD =no asbestos detected; NA =not analyzed; NA/PS=not analyzed/positive stop, (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; PLM Bulk Asbestos Analysis using Motic, Model BA310 Pol Scope, Microscope, Serial #: 1190000538, by Appd E to Subpt E, 40 CFR 763 quantified by either CVES or 400 pt ct as noted for each analysis (NVLAP 200546-0), ELAP PLM Method 198.1 for NY friable samples, which includes the identification and quantitation of vermiculite, or ELAP 198.6 for NOB samples, or EPA 400 pt ct by EPA 600-M4-82-020 (NY ELAP Lab 11480); Note:PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab.This PLM report relates ONLY to the items tested. RI Cert AAL-094, CT Cert PH-0186, Mass Cert AA000054, NJ Lab ID #NY031.

_____END OF REPORT_____

Adelaide Environmental Health Associates, Inc
1454 Rte. 22, Suite B202
Brewster, NY 10509
845-278-7710
845-278-7750 - fax

Site Address: Yonkers Armory	Date: 6/6/2023	Inspector: Jason Fullum
2 Quincy Place	Client Project #	
Yonkers, New York 10701	Project #: OGSX:23168.00-IN	

Sample ID #	Homogeneous Area	Floor Level	Sample Location/Description	Quantity (In Feet)	Friable Non Friable	Condition g, d, sd
1	1	2	Room 207 - 12x12 F.T. - Brown Red Mottled	980SF	NF	G
2	1	2				
3	2	2	Room 214 - - Black Mastic			
4	2	2				
5	3	2	- 2x4 C.T. - Large + Small Holes		NF	
6	3	2				
7	4	2	- Debris on Top of C.T.			SD
8	5	2	- 2x4 C.T. - Scissles + Holes			G
9	5	2				
10	6	2	- CMU Mortar			
11	6	2				
12	7	2	Room 202 - Coveblase - 4" Black + Mastic			
13	7	2				

Special Instructions/ Turnaround Time: 223061619

Stop at 1st Positive per Homogenous Area ***24 HR TAT***
Fax Results to 845-278-7750
E-Mail results to AdelaideLabResults@Adelaidellc.com and Jfullum@adelaidellc.com

Relinquished by:
Received by: Alexandra Vargas 6-7-23 1030
Relinquished by:
Received by:

Adelaide Environmental Health Associates, Inc
1454 Rte. 22, Suite B202
Brewster, NY 10509
845-278-7710
845-278-7750 - fax

Site Address: Yonkers Armory	Date: 6/6/2023	Inspector: Jason Fullum
2 Quincy Place	Client Project #	
Yonkers, New York 10701	Project #: OGSX:23168.00-IN	

Sample ID #	Homogeneous Area	Floor Level	Sample Location/Description	Quantity (In Feet)	Friable Non Friable	Condition g, d, sd
14	8	2	Room 202 - Yellow Carpet Mastic		NF	G
15	8	2	↓ ↓		↓	↓
16	9	2	Hallway - 12x12 F.T. - Green Mottled			
17	9	2	↓ ↓ ↓			
18	10	2	Room 211 - Debris above C.T.		F	SD
19	10	2	Hallway - Drywall Ceiling		F	G
20	11	2	↓ ↓		F	
21	12	2	Room 218 - 12x12 F.T. - Brown + White Mottled		NF	
22	12	2	↓ ↓ ↓		↓	
23	13	2	Hallway - Joint Compound		F	
24	13	2	↓ ↓		F	
25	14	2	Room 222 - 12x12 F.T. - White w/ Gray Specks		NF	
26	14	2	↓ ↓		↓	↓

Special Instructions/ Turnaround Time: 23061619

Stop at 1st Positive per Homogenous Area ***24 HR TAT***
Fax Results to 845-278-7750
E-Mail results to AdelaideLabResults@Adelaidellc.com and Jfullum@adelaidellc.com

Relinquished by:
Received by: Alexandra Vaccaro 6/23 1030
Relinquished by:
Received by:

Adelaide Environmental Health Associates, Inc
1454 Rte. 22, Suite B202
Brewster, NY 10509
845-278-7710
845-278-7750 - fax

Site Address: Yonkers Armory	Date: 6/6/2023	Inspector: Jason Fullum
2 Quincy Place	Client Project #	
Yonkers, New York 10701	Project #: OGSX:23168.00-IN	

Sample ID #	Homogeneous Area	Floor Level	Sample Location/Description	Quantity (In Feet)	Friable Non Friable	Condition g, d, sd
27	15	2	Rm. 223 - Women locker - Terrazzo Shower Pan		NF	D
28	15	2				D
29	16	2	- Sealant at Shower			D
30	16	2				D
31	17	2	Entrance Doors - Door Glazing Compound		NF	
32	17	2				
33	18	2	- Exterior Sealant			
34	18	2				
35	19	2	Concrete			
36	19	2				
37	20	2	Brick Mortar			
38	20	2				
39	21	2	Exterior Vertical Sealant			
40	21	2				

Special Instructions/ Turnaround Time: 223061619

Stop at 1st Positive per Homogenous Area ***24 HR TAT***
Fax Results to 845-278-7750
E-Mail results to AdelaideLabResults@Adelaidellc.com and Jfullum@adelaidellc.com

Relinquished by:
Received by: Alexandra Vuic 6/7/23 1030
Relinquished by:
Received by:

Adelaide Environmental Health Associates, Inc
1454 Rte. 22, Suite B202
Brewster, NY 10509
845-278-7710
845-278-7750 - fax

Site Address: Yonkers Armory	Date: 6/6/2023	Inspector: Jason Fullum
2 Quincy Place	Client Project #	
Yonkers, New York 10701	Project #: OGSX:23168.00-IN	

Sample ID #	Homogeneous Area	Floor Level	Sample Location/Description	Quantity (In Feet)	Friable Non Friable	Condition g, d, sd
41	22	1	Boiler Room - Pipe Mastic on Duct		NF	D
42	22	1				D
43	23	1	Kitchen - Wall Tile - Grout			
44	23	1				
45	24	1	- Mudset			
46	24	1				
47	25	1	- Floor Tile - Grout			
48	25	1				
49	26	1	- Mudset			
50	26	1				
51	27	1	Exterior - Door Caulk			
52	27	1				
53	28	1	- Louver Caulk			
54	28	1				

Special Instructions/ Turnaround Time: 223061619

Stop at 1st Positive per Homogenous Area ***24 HR TAT***
Fax Results to 845-278-7750
E-Mail results to AdelaideLabResults@Adelaidellc.com and Jfullum@adelaidellc.com

Relinquished by:
Received by: Alexandra Vian 6/23 1030
Relinquished by:
Received by:

APPENDIX E

XRF READINGS

Adelaide Environmental Heath Associates Inc.
1511 Route 22, Suite C-24
Brewster, New York 10509
Adelaide Project# BA:23168.00-IN
Project Name: Yonkers Armory
Inspector: Jason Fullum

Reading #	Date	Time	Space Type	Floor	Room	Component	Side	Substrate	Color	Condition	Lead Concentration (mg/cm2)	Result
1	6/6/2023	9:04:22	Armory		Calibration						0.9	Negative
2	6/6/2023	9:04:34	Armory		Calibration						0.9	Negative
3	6/6/2023	9:04:46	Armory		Calibration						0.9	Negative
4	6/6/2023	9:23:29	Armory	2nd Floor	207	Wall	A	CMU	Beige	Intact	-0.2	Negative
5	6/6/2023	9:24:00	Armory	2nd Floor	207	Door Case	A	Metal	Black	Intact	0.4	Negative
6	6/6/2023	9:24:27	Armory	2nd Floor	207	Door	A	Metal	Red	Intact	0.1	Negative
7	6/6/2023	9:25:07	Armory	2nd Floor	201	Door	A	Metal	Red	Intact	0	Negative
8	6/6/2023	9:25:31	Armory	2nd Floor	201	Door Case	A	Metal	Black	Intact	0.5	Negative
9	6/6/2023	9:25:58	Armory	2nd Floor	201	Wall	B	CMU	Black	Intact	-0.2	Negative
10	6/6/2023	10:29:25	Armory	2nd Floor	Hallway	Wall	B	CMU	Beige	Intact	-0.3	Negative
11	6/6/2023	10:30:21	Armory	2nd Floor	Hallway	Ceiling	Ceiling	Sheetrock	Beige	Intact	0.1	Negative
12	6/6/2023	11:18:54	Armory	2nd Floor	Hallway	Stair Handrail	A	Metal	Red	Intact	0.1	Negative
13	6/6/2023	11:19:20	Armory	2nd Floor	Hallway	Stair Stringer	A	Metal	Red	Intact	0.1	Negative
14	6/6/2023	11:19:35	Armory	2nd Floor	Hallway	Stair Riser	A	Metal	Red	Intact	0.2	Negative
15	6/6/2023	11:21:42	Armory	2nd Floor	Hallway	Ceiling	Ceiling	Sheetrock	Off White	Intact	0.1	Negative
16	6/6/2023	11:28:51	Armory	2nd Floor	Bathroom	Floor	Floor	Concrete	Grey	Intact	0	Negative
17	6/6/2023	11:30:19	Armory	2nd Floor	Bathroom	Floor	Floor	Concrete	Red	Intact	0	Negative
18	6/6/2023	11:30:37	Armory	2nd Floor	Bathroom	Floor	Floor	Concrete	Yellow	Intact	0	Negative
19	6/6/2023	11:31:02	Armory	2nd Floor	Bathroom	Wall	A	CMU	Yellow	Intact	-0.2	Negative
20	6/6/2023	11:31:26	Armory	2nd Floor	Bathroom	Ceiling	Ceiling	Sheetrock	Yellow	Intact	-0.2	Negative
21	6/6/2023	11:41:55	Armory	2nd Floor	223	Wall	D	CMU	Off White	Intact	-0.1	Negative
22	6/6/2023	11:42:25	Armory	2nd Floor	223	Door	A	Metal	Red	Intact	0	Negative
23	6/6/2023	11:42:48	Armory	2nd Floor	223	Door Case	A	Metal	Black	Intact	0.4	Negative
24	6/6/2023	11:43:21	Armory	2nd Floor	223	Floor	Floor	Concrete	Red	Intact	0	Negative
25	6/6/2023	11:43:50	Armory	2nd Floor	223	Wall	B	CMU	Yellow	Intact	-0.3	Negative
26	6/6/2023	11:45:02	Armory	2nd Floor	223	Ceiling	Ceiling	Sheetrock	Yellow	Intact	0	Negative
27	6/6/2023	13:30:04	Armory	1st Floor	Bathroom	Floor	Floor	Concrete	Green	Intact	0.2	Negative
28	6/6/2023	13:30:37	Armory	1st Floor	Bathroom	Wall	A	CMU	Beige	Intact	-0.1	Negative
29	6/6/2023	13:31:07	Armory	1st Floor	Bathroom	Ceiling	Ceiling	Sheetrock	Beige	Intact	-0.2	Negative
30	6/6/2023	13:33:44	Armory	1st Floor	Exterior	roll up door rail	C	Metal	Green	Intact	0	Negative
31	6/6/2023	13:34:32	Armory	1st Floor	Exterior	Door	C	Metal	Green	Intact	0.1	Negative
32	6/6/2023	13:34:50	Armory	1st Floor	Exterior	Exterior Door	C	Metal	Green	Intact	-0.1	Negative
33	6/6/2023	13:35:08	Armory	1st Floor	Exterior	Exterior Door Case	C	Metal	Green	Intact	0.4	Negative
34	6/6/2023	14:01:04	Armory	1st Floor	Exterior	Window Case	B	Metal	Green	Intact	0	Negative
35	6/6/2023	14:05:06	Armory		Calibration						0.9	Negative
36	6/6/2023	14:05:18	Armory		Calibration						1	Positive
37	6/6/2023	14:05:30	Armory		Calibration						1	Positive

APPENDIX F

PCB ANALYTICAL RESULTS

PHOENIX
Environmental Laboratories, Inc.

Thursday, June 15, 2023

Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Project ID: YONKERS ARMORY 23168.00
SDG ID: GCO21952
Sample ID#s: CO21952 - CO21957

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Sample Id Cross Reference

June 15, 2023

SDG I.D.: GCO21952

Project ID: YONKERS ARMORY 23168.00

Client Id	Lab Id	Matrix
PCB1-WOMENS SHOWER	CO21952	BULK
PCB2-GLAZING	CO21953	CAULK
PCB3-EXT. DOOR CAULK	CO21954	CAULK
PCB4-EXT. SEALANT	CO21955	CAULK
PCB5- EXT. DOOR CAULK	CO21956	CAULK
PCB 6-LOUVER CAULK	CO21957	CAULK

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

June 15, 2023

FOR: Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Sample Information		Custody Information		Date	Time
Matrix:	BULK	Collected by:		06/06/23	
Location Code:	ADELAIDE	Received by:	MMN	06/07/23	17:16
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCO21952
Phoenix ID: CO21952

Project ID: YONKERS ARMORY 23168.00
Client ID: PCB1-WOMENS SHOWER

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for PCB	Completed				06/08/23	R/AW/SB/I	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1221	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1232	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1242	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1248	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1254	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1260	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1262	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1268	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
QA/QC Surrogates							
% DCBP	55		%	1	06/09/23	SC	30 - 150 %
% DCBP (Confirmation)	40		%	1	06/09/23	SC	30 - 150 %
% TCMX	52		%	1	06/09/23	SC	30 - 150 %
% TCMX (Confirmation)	47		%	1	06/09/23	SC	30 - 150 %

Project ID: YONKERS ARMORY 23168.00 Phoenix I.D.: CO21952
Client ID: PCB1-WOMENS SHOWER

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

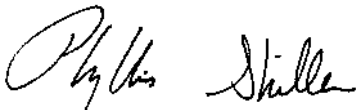
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
Due to limited sample an elevated RL was reported.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director
June 15, 2023
Reviewed and Released by: Rashmi Makol, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH NY #11301

Analysis Report

June 15, 2023

FOR: Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Sample Information		Custody Information		Date	Time
Matrix:	CAULK	Collected by:		06/06/23	
Location Code:	ADELAIDE	Received by:	MMN	06/07/23	17:16
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCO21952
Phoenix ID: CO21953

Project ID: YONKERS ARMORY 23168.00
Client ID: PCB2-GLAZING

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				06/08/23	R/AW/SB/I	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1221	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1232	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1242	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1248	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1254	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1260	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1262	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1268	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
QA/QC Surrogates							
% DCBP	54		%	1	06/09/23	SC	30 - 150 %
% DCBP (Confirmation)	52		%	1	06/09/23	SC	30 - 150 %
% TCMX	57		%	1	06/09/23	SC	30 - 150 %
% TCMX (Confirmation)	55		%	1	06/09/23	SC	30 - 150 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director
June 15, 2023
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

Analysis Report

June 15, 2023

FOR: Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Sample Information		Custody Information		Date	Time
Matrix:	CAULK	Collected by:		06/06/23	
Location Code:	ADELAIDE	Received by:	MMN	06/07/23	17:16
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCO21952
Phoenix ID: CO21954

Project ID: YONKERS ARMORY 23168.00
Client ID: PCB3-EXT. DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				06/08/23	R/AW/SB/I	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1221	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1232	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1242	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1248	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1254	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1260	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1262	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1268	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
QA/QC Surrogates							
% DCBP	39		%	1	06/09/23	SC	30 - 150 %
% DCBP (Confirmation)	34		%	1	06/09/23	SC	30 - 150 %
% TCMX	31		%	1	06/09/23	SC	30 - 150 %
% TCMX (Confirmation)	31		%	1	06/09/23	SC	30 - 150 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

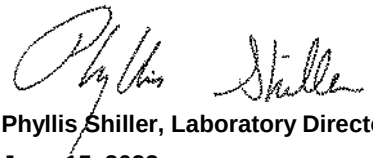
RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director
June 15, 2023
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

Analysis Report

June 15, 2023

FOR: Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Sample Information		Custody Information		Date	Time
Matrix:	CAULK	Collected by:		06/06/23	
Location Code:	ADELAIDE	Received by:	MMN	06/07/23	17:16
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCO21952
Phoenix ID: CO21955

Project ID: YONKERS ARMORY 23168.00
Client ID: PCB4-EXT. SEALANT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				06/08/23	R/AW/SB/I	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1221	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1232	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1242	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1248	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1254	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1260	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1262	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1268	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
QA/QC Surrogates							
% DCBP	41		%	1	06/09/23	SC	30 - 150 %
% DCBP (Confirmation)	35		%	1	06/09/23	SC	30 - 150 %
% TCMX	36		%	1	06/09/23	SC	30 - 150 %
% TCMX (Confirmation)	36		%	1	06/09/23	SC	30 - 150 %

Project ID: YONKERS ARMORY 23168.00 Phoenix I.D.: CO21955
Client ID: PCB4-EXT. SEALANT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

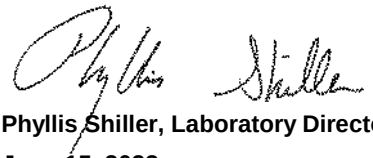
RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director
June 15, 2023
Reviewed and Released by: Rashmi Makol, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

June 15, 2023

FOR: Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Sample Information		Custody Information		Date	Time
Matrix:	CAULK	Collected by:		06/06/23	
Location Code:	ADELAIDE	Received by:	MMN	06/07/23	17:16
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCO21952
Phoenix ID: CO21956

Project ID: YONKERS ARMORY 23168.00
Client ID: PCB5- EXT. DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				06/08/23	R/AW/SB/I	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1221	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1232	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1242	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1248	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1254	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1260	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1262	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1268	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
QA/QC Surrogates							
% DCBP	43		%	1	06/09/23	SC	30 - 150 %
% DCBP (Confirmation)	36		%	1	06/09/23	SC	30 - 150 %
% TCMX	39		%	1	06/09/23	SC	30 - 150 %
% TCMX (Confirmation)	38		%	1	06/09/23	SC	30 - 150 %

Project ID: YONKERS ARMORY 23168.00 Phoenix I.D.: CO21956
Client ID: PCB5- EXT. DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

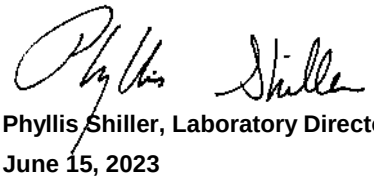
RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director
June 15, 2023
Reviewed and Released by: Rashmi Makol, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH NY #11301

Analysis Report

June 15, 2023

FOR: Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Sample Information		Custody Information		Date	Time
Matrix:	CAULK	Collected by:		06/06/23	
Location Code:	ADELAIDE	Received by:	MMN	06/07/23	17:16
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCO21952
Phoenix ID: CO21957

Project ID: YONKERS ARMORY 23168.00
Client ID: PCB 6-LOUVER CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference	
Caulk Extraction for PCB	Completed				06/12/23	Q/AC1	SW3540C	
PCB (Soxhlet SW3540C)								
PCB-1016	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1221	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1232	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1242	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1248	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1254	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1260	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1262	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1268	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
QA/QC Surrogates								
% DCBP	17		%	1	06/13/23	SC	30 - 150 %	3
% DCBP (Confirmation)	17		%	1	06/13/23	SC	30 - 150 %	3
% TCMX	17		%	1	06/13/23	SC	30 - 150 %	3
% TCMX (Confirmation)	17		%	1	06/13/23	SC	30 - 150 %	3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

3 = This parameter exceeds laboratory specified limits.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

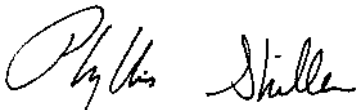
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
Poor surrogate recovery was observed for PCBs. Sample was re-extracted with similar results.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director
June 15, 2023
Reviewed and Released by: Rashmi Makol, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

QA/QC Report

June 15, 2023

QA/QC Data

SDG I.D.: GCO21952

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 681421 (ug/Kg), QC Sample No: CO21956 10X (CO21952, CO21953, CO21954, CO21955, CO21956)										
Polychlorinated Biphenyls - Bulk										
PCB-1016	ND	170	99	91	8.4				40 - 140	30
PCB-1221	ND	170							40 - 140	30
PCB-1232	ND	170							40 - 140	30
PCB-1242	ND	170							40 - 140	30
PCB-1248	ND	170							40 - 140	30
PCB-1254	ND	170							40 - 140	30
PCB-1260	ND	170	106	107	0.9				40 - 140	30
PCB-1262	ND	170							40 - 140	30
PCB-1268	ND	170							40 - 140	30
% DCBP (Surrogate Rec)	107	%	111	106	4.6				30 - 150	30
% DCBP (Surrogate Rec) (Confirm	102	%	101	102	1.0				30 - 150	30
% TCMX (Surrogate Rec)	89	%	95	87	8.8				30 - 150	30
% TCMX (Surrogate Rec) (Confirm	82	%	89	82	8.2				30 - 150	30
Comment:										
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.										
QA/QC Batch 681903 (ug/Kg), QC Sample No: CO21957 10X (CO21957)										
Polychlorinated Biphenyls										
PCB-1016	ND	170	101	105	3.9				40 - 140	30
PCB-1221	ND	170							40 - 140	30
PCB-1232	ND	170							40 - 140	30
PCB-1242	ND	170							40 - 140	30
PCB-1248	ND	170							40 - 140	30
PCB-1254	ND	170							40 - 140	30
PCB-1260	ND	170	115	121	5.1				40 - 140	30
PCB-1262	ND	170							40 - 140	30
PCB-1268	ND	170							40 - 140	30
% DCBP (Surrogate Rec)	104	%	100	109	8.6				30 - 150	30
% DCBP (Surrogate Rec) (Confirm	109	%	103	111	7.5				30 - 150	30
% TCMX (Surrogate Rec)	99	%	95	103	8.1				30 - 150	30
% TCMX (Surrogate Rec) (Confirm	98	%	95	102	7.1				30 - 150	30
Comment:										
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.										

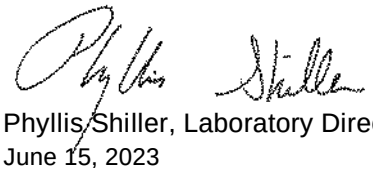
QA/QC Data

SDG I.D.: GCO21952

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference



Phyllis Shiller, Laboratory Director
June 15, 2023

Thursday, June 15, 2023

Criteria: None

State: NY

Sample Criteria Exceedances Report

GCO21952 - ADELAIDE

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
CO21952	$PCB_SOXR	PCB-1268	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1262	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1260	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1254	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1248	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1242	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1232	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1221	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1016	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Comments

June 15, 2023 SDG I.D.: GCO21952

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report:

PCB Narration

AU-ECD5 06/13/23-1: CO21957

The following Continuing Calibration compounds did not meet % deviation criteria:
Samples: CO21957
Preceding CC 613B016 - None.
Succeeding CC 613B029 - DCBP SURR 23%L (15%)

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

NY Temperature Narration

June 15, 2023

SDG I.D.: GCO21952

The samples in this delivery group were received at 1.1°C.
(Note acceptance criteria for relevant matrices is above freezing up to 6°C)

Cooler: Yes ☐ No ☐
Coolant: IPK ☐ ICE ☐ No ☐
Temp ____ °C Pg ____ of ____

NY/NJ/PA CHAIN OF CUSTODY RECORD

PHOENIX Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: Makrina Nolan, makrina@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-1102

Contact Options:
☐ Phone:
☐ Fax:
☐ Email:

Customer: Adelaide
Address: 1511 Rte 22, Ste C24
Somerset, NJ 10505

Project: Yankee Armory 23168.00
Report to:
Invoice to:
QUOTE # :

Project P.O:

This section MUST be completed with Bottle Quantities.

Sampler's Signature: _____ Date: 6/6/23

Client Sample - Information / Identification

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe
OIL=Oil B=Bulk L=Liquid

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	*MS/MSD (May be billable at analysis unit rate)	PCB's	BAS	GL Amber 8 oz. [ ] wt H_3PO_4 [ ] $NaHSO_4$	Soil VOA Vials [ ] methanol [ ] H_2O	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] H_2SO_4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H_2SO_4 [ ] 250ml [ ] 500ml [ ] 1000ml	PL NaOH 250ml	PL HNO_3 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
21952	PCB1-Women Shower		6/6/23			X	1											
21953	PCB2-Glazing Compd		6/6/23			X	1											
21954	PCB3-Ext. Door Caulk		6/6/23			X	1											
21955	PCB4-Ext. Vert. Sealant		6/6/23			X	1											
21956	PCB5-Ext. Door Caulk		6/6/23			X	1											
21957	PCB6-Louver Caulk		6/6/23			X	1											

Relinquished by:	Accepted by:	Date:	Time:
		6.7.23	1000
		6-7-23	15:45
		6/7/23	17:16

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☐ 4 Days*
☐ 5 Days*
☐ Standard
* SURCHARGE APPLIES
7 DAYS

NJ
☐ Res. Criteria
☐ Non-Res. Criteria
☐ Impact to GW Soil Cleanup Criteria
☐ Impact to GW soil screen Criteria
☐ GW Criteria

NY
☐ TOGS GW
☐ CP-51 SOIL
☐ 375SCO Unrestricted Soil
☐ 375SCO Residential Soil
☐ 375SCO Residential Restricted Soil
☐ 375SCO Commercial Soil
☐ 375SCO Industrial Soil
☐ Subpart 5 DW

PA
☐ Clean Fill Limits
☐ PA-GW
☐ Reg Fill Limits
☐ PA Soil Restricted
☐ PA Soil non-restricted

State Samples Collected?
NY

Data Package:
☐ NJ Reduced Deliv. *
☐ NY Enhanced (ASP B) *
☐ Other

Comments, Special Requirements or Regulations:

Data Format:
☐ Phoenix Std Report ☐ EQuIS
☐ Excel ☐ NJ Hazsite EDD
☐ PDF ☐ NY EZ EDD (ASP)
☐ GIS/Key ☐ Other

*MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.

APPENDIX G

PERSONNEL AND LABORATORY CERTIFICATIONS

[redacted]

DIVISION OF SAFETY & HEALTH LIC[redacted]US, BLDG. 12, ALBANY, NY 12226

ASBESTOS HANDLING LICENSE

Adelaide Environmental Health Associates, Inc.
1511 Route 22, Suite C24, Brewster, NY, 10509

License Number: 29305
License Class: RESTRICTED
Date of Issue: 06/07/2023
Expiration Date: 07/31/2024
Duly Authorized Representative: John Soter

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director
For the Commissioner of Labor

United States Environmental Protection Agency

This is to certify that

ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires September 08, 2025

LBP-15081-2

Certification #

August 25, 2022

Issued On

Michelle Price, Chief

Lead, Heavy Metals, and Inorganics Branch

United States Environmental Protection Agency

This is to certify that

Adelaide Environmental Health Associates, Inc

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint renovation, repair, and painting activities pursuant to 40 CFR Part 745.89

In the Jurisdiction of:

All EPA Administered States, Tribes, and Territories

This certification is valid from the date of issuance and expires December 05, 2027

NAT-15081-3

Certification #

August 03, 2022

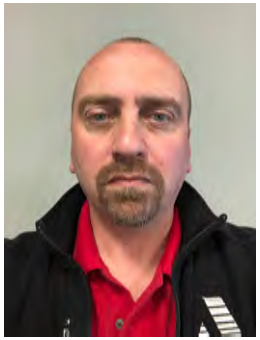
Issued On

Michelle Price, Chief

Lead, Heavy Metals, and Inorganics Branch

United States Environmental Protection Agency

This is to certify that



Jason P Fullum

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Risk Assessor

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires July 11, 2023

LBP-R-12098-2

Certification #

May 07, 2020

Issued On

Susan Schulz, Acting Chief

Chemicals and Multimedia Programs Branch

STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE

N.Y.S



JASON P FULLUM
CLASS(EXPIRES)
C ATEC(02/24) D INSP(02/24)
E MGPL(02/24) H PM (02/24)
I PD (02/24)

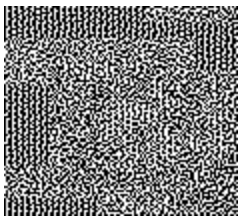
CERT# 97-20574
DMV# 375065936

MUST BE CARRIED ON ASBESTOS PROJECTS

EYES BLU
HAIR BRO
HGT 5' 11"

IF FOUND RETURN TO:
NYSDOL - L&C UNIT
ROOM 161A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2024
Issued April 01, 2022
Revised March 30, 2023

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. KAROL H. LU
AMERICA SCIENCE TEAM NEW YORK, INC
117 EAST 30TH ST
NEW YORK, NY 10016

NY Lab Id No: 11480

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	Item 198.1 of Manual
	EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual



Serial No.: 66402

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2024
Issued April 01, 2022
Revised March 30, 2023

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. PHYLLIS SHILLER
PHOENIX ENVIRONMENTAL LABS
587 EAST MIDDLE TURNPIKE
MANCHESTER, CT 06040

NY Lab Id No: 11301

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Polychlorinated Biphenyls

Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1262 (PCB-1262) in Oil	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A
Aroclor 1268 (PCB-1268) in Oil	EPA 8082A
PCB 101	EPA 8082A
PCB 105	EPA 8082A
PCB 118	EPA 8082A
PCB 128	EPA 8082A
PCB 138	EPA 8082A
PCB 153	EPA 8082A
PCB 170	EPA 8082A
PCB 18	EPA 8082A
PCB 180	EPA 8082A
PCB 183	EPA 8082A
PCB 184	EPA 8082A
PCB 187	EPA 8082A
PCB 195	EPA 8082A
PCB 206	EPA 8082A
PCB 209	EPA 8082A
PCB 28	EPA 8082A
PCB 44	EPA 8082A
PCB 49	EPA 8082A
PCB 52	EPA 8082A
PCB 66	EPA 8082A
PCB 8	EPA 8082A
PCB 87	EPA 8082A
PCB Congeners, Total	EPA 8082A

Serial No.: 66336

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2024
Issued April 01, 2022
Revised March 30, 2023

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. PHYLLIS SHILLER
PHOENIX ENVIRONMENTAL LABS
587 EAST MIDDLE TURNPIKE
MANCHESTER, CT 06040

NY Lab Id No: 11301

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved analytes are listed below:

Acrylates	
Acrylonitrile	EPA TO-15
Methyl methacrylate	EPA TO-15
Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	EPA TO-15
Hexachlorobutadiene	EPA TO-15
Hexachloroethane	EPA TO-15
Metals I	
Lead, Total	EPA 29 (6010)
	EPA 7010
Polychlorinated Biphenyls	
PCBs and Aroclors	EPA TO-10A
Polynuclear Aromatics	
Naphthalene	EPA TO-15
Purgeable Aromatics	
1,2,4-Trimethylbenzene	EPA TO-15
1,2-Dichlorobenzene	EPA TO-15
1,3,5-Trimethylbenzene	EPA TO-15
1,3-Dichlorobenzene	EPA TO-15
1,4-Dichlorobenzene	EPA TO-15
2-Chlorotoluene	EPA TO-15
Benzene	EPA TO-15
Chlorobenzene	EPA TO-15
Ethyl benzene	EPA TO-15
Isopropylbenzene	EPA TO-15
m/p-Xylenes	EPA TO-15

Serial No.: 66338

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov.

Kathy Hochul, Governor

Roberta Reardon, Commissioner

Contract Management

Contract Awards
Contract Management - 35th Fl.
Corning Tower
Empire State Plaza
Albany NY 12242

Schedule Year	2026 through 2027
Date Requested	08/21/2026
PRC#	2026024953

Location	State Armory
Project ID#	47477
Project Type	Renovate Armory

PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Rate Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2026 through June 2027. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website www.labor.ny.gov. Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: _____ Date Cancelled: _____

Name & Title of Representative: _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

General Provisions of Laws Covering Workers on Article 8 Public Work Contracts

Introduction

The Labor Law requires public work contractors and subcontractors to pay laborers, workers, or mechanics employed in the performance of a public work contract not less than the prevailing rate of wage and supplements (fringe benefits) in the locality where the work is performed.

Contractor Registry

Effective December 30, 2024 all contractors and subcontractors submitting bids or performing construction work on public work projects, or private projects covered by Article 8 of the Labor Law, are required to register with the New York State Department of Labor (NYSDOL) under Labor Law Section 220-i. To register, contractors and subcontractors must submit an application through NYSDOL's Contractor Registry portal which is available through the agency's Management System for Protecting Worker Rights (MPWR) https://mpwr-public.labor.ny.gov/en/login.

For additional information, please visit online.

Responsibilities of the Department of Jurisdiction

A Department of Jurisdiction (Contracting Agency) includes a state department, agency, board or commission: a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporation; a public benefit corporation; and a public authority awarding a public work contract.

The Department of Jurisdiction (Contracting Agency) awarding a public work contract MUST obtain a Prevailing Rate Schedule listing the hourly rates of wages and supplements due the workers to be employed on a public work project. This schedule may be obtained by completing and forwarding a "Request for wage and Supplement Information" form (PW 39) to the Bureau of Public Work. The Prevailing Rate Schedule MUST be included in the specifications for the contract to be awarded and is deemed part of the public work contract.

Upon the awarding of the contract, the law requires that the Department of Jurisdiction (Contracting Agency) furnish the following information to the Bureau: the name and address of the contractor, the date the contract was let and the approximate dollar value of the contract. To facilitate compliance with this provision of the Labor Law, a copy of the Department's "Notice of Contract Award" form (PW 16) is provided with the original Prevailing Rate Schedule.

The Department of Jurisdiction (Contracting Agency) is required to notify the Bureau of the completion or cancellation of any public work project. The Department's PW 200 form is provided for that purpose.

Both the PW 16 and PW 200 forms are available for completion online.

Hours

No laborer, worker, or mechanic in the employ of a contractor or subcontractor engaged in the performance of any public work project shall be permitted to work more than eight hours in any day or more than five days in any week, except in cases of extraordinary emergency. The contractor and the Department of Jurisdiction (Contracting Agency) may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project.

Wages and Supplements

The wages and supplements to be paid and/or provided to laborers, workers, and mechanics employed on a public work project shall be not less than those listed in the current Prevailing Rate Schedule for the locality where the work is performed. If a prime contractor on a public work project has not been provided with a Prevailing Rate Schedule, the contractor must notify the Department of Jurisdiction (Contracting Agency) who in turn must request an original Prevailing Rate Schedule form the Bureau of Public Work. Requests may be submitted by: mail to NYSDOL, Bureau of Public Work, State Office Bldg. Campus, Bldg. 12, Rm. 130, Albany, NY 12226; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website www.labor.ny.gov.

Upon receiving the original schedule, the Department of Jurisdiction (Contracting Agency) is REQUIRED to provide complete copies to all prime contractors who in turn MUST, by law, provide copies of all applicable county schedules to each subcontractor and obtain from each subcontractor, an affidavit certifying such schedules were received. If the original schedule expired, the contractor may obtain a copy of the new annual determination from the NYSDOL website www.labor.ny.gov.

The Commissioner of Labor makes an annual determination of the prevailing rates. This determination is in effect from July 1st through June 30th of the following year. The annual determination is available on the NYSDOL website

www.labor.ny.gov.

Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. As per Article 6 of the Labor law, contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemperaneous, true, and accurate payroll records. At a minimum, payrolls must show the following information for each person employed on a public work project: Name, Address, Last 4 Digits of Social Security Number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid or provided, and Daily and weekly number of hours worked in each classification.

The filing of payrolls to the Department of Jurisdiction is a condition of payment.Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury. The Department of Jurisdiction (Contracting Agency) shall collect, review for facial validity, and maintain such payrolls.

In addition, the Commissioner of Labor may require contractors to furnish, with ten (10) days of a request, payroll records sworn to as their validity and accuracy for public work and private work. Payroll records include, but are not limited to time cards, work description sheets, proof that supplements were provided, cancelled payroll checks and payrolls. Failure to provide the requested information within the allotted ten (10) days will result in the withholding of up to 25% of the contract, not to exceed $100,000.00. If the contractor or subcontractor does not maintain a place of business in New York State and the amount of the contract exceeds $25,000.00, payroll records and certifications must be kept on the project worksite.

The prime contractor is responsible for any underpayments of prevailing wages or supplements by any subcontractor.

All contractors or their subcontractors shall provide to their subcontractors a copy of the Prevailing Rate Schedule specified in the public work contract as well as any subsequently issued schedules. A failure to provide these schedules by a contractor or subcontractor is a violation of Article 8, Section 220-a of the Labor Law.

All subcontractors engaged by a public work project contractor or its subcontractor, upon receipt of the original schedule and any subsequently issued schedules, shall provide to such contractor a verified statement attesting that the subcontractor has received the Prevailing Rate Schedule and will pay or provide the applicable rates of wages and supplements specified therein. (See NYS Labor Laws, Article 8 . Section 220-a).

Determination of Prevailing Wage and Supplement Rate Updates Applicable to All Counties

The wages and supplements contained in the annual determination become effective July 1st whether or not the new determination has been received by a given contractor. Care should be taken to review the rates for obvious errors. Any corrections should be brought to the Department's attention immediately. It is the responsibility of the public work contractor to use the proper rates. If there is a question on the proper classification to be used, please call the district office located nearest the project. Any errors in the annual determination will be corrected and posted to the NYSDOL website on the first business day of each month. Contractors are responsible for paying these updated rates as well, retroactive to July 1st.

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. To the extent possible, the Department posts rates in its possession that cover periods of time beyond the July 1st to June 30th time frame covered by a particular annual determination. Rates that extend beyond that instant time period are informational ONLY and may be updated in future annual determinations that actually cover the then appropriate July 1st to June 30th time period.

Withholding of Payments

When a complaint is filed with the Commissioner of Labor alleging the failure of a contractor or subcontractor to pay or provide the prevailing wages or supplements, or when the Commissioner of Labor believes that unpaid wages or supplements may be due, payments on the public work contract shall be withheld from the prime contractor in a sufficient amount to satisfy the alleged unpaid wages and supplements, including interest and civil penalty, pending a final determination.

When the Bureau of Public Work finds that a contractor or subcontractor on a public work project failed to pay or provide the requisite prevailing wages or supplements, the Bureau is authorized by Sections 220-b and 235.2 of the Labor Law to so notify the financial officer of the Department of Jurisdiction (Contracting Agency) that awarded the public work contract. Such officer MUST then withhold or cause to be withheld from any payment due the prime contractor on account of such contract the amount indicated by the Bureau as sufficient to satisfy the unpaid wages and supplements, including interest and any civil penalty that may be assessed by the Commissioner of Labor. The withholding continues until there is a final determination of the underpayment by the Commissioner of Labor or by the court in the event a legal proceeding is instituted for review of the determination of the Commissioner of Labor.

The Department of Jurisdiction (Contracting Agency) shall comply with this order of the Commissioner of Labor or of the court with respect to the release of the funds so withheld.

Summary of Notice Posting Requirements

The current Prevailing Rate Schedule must be posted in a prominent and accessible place on the site of the public work project. The prevailing wage schedule must be encased in, or constructed of, materials capable of withstanding adverse weather conditions and be titled "PREVAILING RATE OF WAGES" in letters no smaller than two (2) inches by two (2) inches.

The "Public Work Project" notice must be posted at the beginning of the performance of every public work contract, on each job site.

Every employer providing workers. compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers. Compensation Board in a conspicuous place on the jobsite.

Every employer subject to the NYS Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers, notices furnished by the State Division of Human Rights.

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the NYS Department of Labor.

Apprentices

Employees cannot be paid apprentice rates unless they are individually registered in a program registered with the NYS Commissioner of Labor. The allowable ratio of apprentices to journeyworkers in any craft classification can be no greater than the statewide building trade ratios promulgated by the Department of Labor and included with the Prevailing Rate Schedule. An employee listed on a payroll as an apprentice who is not registered as above or is performing work outside the classification of work for which the apprentice is indentured, must be paid the prevailing journeyworker's wage rate for the classification of work the employee is actually performing.

NYSDOL Labor Law, Article 8, Section 220-3, require that only apprentices individually registered with the NYS Department of Labor may be paid apprenticeship rates on a public work project. No other Federal or State Agency of office registers apprentices in New York State.

Persons wishing to verify the apprentice registration of any person must do so in writing by mail, to the NYSDOL Office of Employability Development / Apprenticeship Training, State Office Bldg. Campus, Bldg. 12, Albany, NY 12226 or by Fax to NYSDOL Apprenticeship Training (518) 457-7154. All requests for verification must include the name and social security number of the person for whom the information is requested.

The only conclusive proof of individual apprentice registration is written verification from the NYSDOL Apprenticeship Training Albany Central office. Neither Federal nor State Apprenticeship Training offices outside of Albany can provide conclusive registration information.

It should be noted that the existence of a registered apprenticeship program is not conclusive proof that any person is registered in that program. Furthermore, the existence or possession of wallet cards, identification cards, or copies of state forms is not conclusive proof of the registration of any person as an apprentice.

Interest and Penalties

In the event that an underpayment of wages and/or supplements is found:

- Interest shall be assessed at the rate then in effect as prescribed by the Superintendent of Banks pursuant to section 14-a of the Banking Law, per annum from the date of underpayment to the date restitution is made.
- A Civil Penalty may also be assessed, not to exceed 25% of the total of wages, supplements, and interest due.

Debarment

Any contractor or subcontractor and/or its successor shall be ineligible to submit a bid on or be awarded any public work contract or subcontract with any state, municipal corporation or public body for a period of five (5) years when:

- Two (2) willful determinations have been rendered against that contractor or subcontractor and/or its successor within any consecutive six (6) year period.
- There is any willful determination that involves the falsification of payroll records or the kickback of wages or supplements.

Criminal Sanctions

Willful violations of the Prevailing Wage Law (Article 8 of the Labor Law) may be a felony punishable by fine or imprisonment of up to 15 years, or both.

Discrimination

No employee or applicant for employment may be discriminated against on account of age, race, creed, color, national origin, sex, disability or marital status.

No contractor, subcontractor nor any person acting on its behalf, shall by reason of race, creed, color, disability, sex or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates (NYS Labor Law, Article 8, Section 220-e(a)).

No contractor, subcontractor, nor any person acting on its behalf, shall in any manner, discriminate against or intimidate any employee on account of race, creed, color, disability, sex, or national origin (NYS Labor Law, Article 8, Section 220-e(b)).

The Human Rights Law also prohibits discrimination in employment because of age, marital status, or religion.

There may be deducted from the amount payable to the contractor under the contract a penalty of $50.00 for each calendar day during which such person was discriminated against or intimidated in violation of the provision of the contract (NYS Labor Law, Article 8, Section 220-e(c)).

The contract may be cancelled or terminated by the State or municipality. All monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of the anti-discrimination sections of the contract (NYS Labor Law, Article 8, Section 220-e(d)).

Every employer subject to the New York State Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers notices furnished by the State Division of Human Rights.

Workers' Compensation

In accordance with Section 142 of the State Finance Law, the contractor shall maintain coverage during the life of the contract for the benefit of such employees as required by the provisions of the New York State Workers' Compensation Law.

A contractor who is awarded a public work contract must provide proof of workers' compensation coverage prior to being allowed to begin work.

The insurance policy must be issued by a company authorized to provide workers' compensation coverage in New York State. Proof of coverage must be on form C-105.2 (Certificate of Workers' Compensation Insurance) and must name this agency as a certificate holder.

If New York State coverage is added to an existing out-of-state policy, it can only be added to a policy from a company authorized to write workers' compensation coverage in this state. The coverage must be listed under item 3A of the information page.

The contractor must maintain proof that subcontractors doing work covered under this contract secured and maintained a workers' compensation policy for all employees working in New York State.

Every employer providing worker's compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

Unemployment Insurance

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the New York State Department of Labor.

Kathy Hochul, Governor

Roberta Reardon, Commissioner

Contract Management

Contract Awards
Contract Management - 35th Fl.
Corning Tower
Empire State Plaza
Albany NY 12242

Schedule Year	2026 through 2027
Date Requested	08/21/2026
PRC#	2026024953

Location	State Armory
Project ID#	47477
Project Type	Renovate Armory

Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

Contractor Information
All information must be supplied

Federal Employer Identification Number: _____

Name: _____

Address: _____

_____

City: _____ State: _____ Zip: _____

Amount of Contract: $_____

Approximate Starting Date: ____/____/____

Approximate Completion Date: ____/____/____

Contract Type:

[ ] (01) General Construction
[ ] (02) Heating/Ventilation
[ ] (03) Electrical
[ ] (04) Plumbing
[ ] (05) Other : _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12226

Social Security Numbers on Certified Payrolls:

The Department of Labor is cognizant of the concerns of the potential for misuse or inadvertent disclosure of social security numbers. Identity theft is a growing problem and we are sympathetic to contractors' concern regarding inclusion of this information on payrolls if another identifier will suffice.

For these reasons, the substitution of the use of the last four digits of the social security number on certified payrolls submitted to contracting agencies on public work projects is now acceptable to the Department of Labor. This change does not affect the Department's ability to request and receive the entire social security number from employers during its public work/ prevailing wage investigations.

Construction Industry Fair Play Act: Required Posting for Labor Law Article 25-B § 861-d

Construction industry employers must post the "Construction Industry Fair Play Act" notice in a prominent and accessible place on the job site. Failure to post the notice can result in penalties of up to $1,500 for a first offense and up to $5,000 for a second offense. The posting is included as part of this wage schedule. Additional copies may be obtained from the NYS DOL website, https://dol.ny.gov/public-work-and-prevailing-wage
If you have any questions concerning the Fair Play Act, please call the State Labor Department toll-free at 1-866-435-1499 or email us at: dol.misclassified@labor.ny.gov .

Worker Notification: (Labor Law §220, paragraph a of subdivision 3-a)

Effective June 23, 2020

This provision is an addition to the existing wage rate law, Labor Law §220, paragraph a of subdivision 3-a. It requires contractors and subcontractors to provide written notice to all laborers, workers or mechanics of the *prevailing wage and supplement rate* for their particular job classification *on each pay stub**. It also requires contractors and subcontractors to *post a notice* at the beginning of the performance of every public work contract *on each job site* that includes the telephone number and address for the Department of Labor and a statement informing laborers, workers or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her job classification. The required notification will be provided with each wage schedule, may be downloaded from our website *www.labor.ny.gov* or be made available upon request by contacting the Bureau of Public Work at 518-457-5589. *In the event the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.

(12.20)

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

Budget Policy & Reporting Manual

B-610

Public Work Enforcement Fund

effective date December 7, 2005

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1. Purpose and Scope:

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, maintenance and repair, and announces the recently-enacted increase to the percentage of the dollar value of such contracts that must be deposited into the Fund. This item also describes the roles of the following entities with respect to the Fund:

- New York State Department of Labor (DOL),
- The Office of the State of Comptroller (OSC), and
- State agencies and public benefit corporations.

2. Background and Statutory References:

DOL uses the Fund to enforce the State's Labor Law as it relates to contracts for construction or reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law. State agencies and public benefit corporations participating in such contracts are required to make payments to the Fund.

Chapter 511 of the Laws of 1995 (as amended by Chapter 513 of the Laws of 1997, Chapter 655 of the Laws of 1999, Chapter 376 of the Laws of 2003 and Chapter 407 of the Laws of 2005) established the Fund.

3. Procedures and Agency Responsibilities:

The Fund is supported by transfers and deposits based on the value of contracts for construction and reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law, into which all State agencies and public benefit corporations enter.

Chapter 407 of the Laws of 2005 increased the amount required to be provided to this fund to .10 of one-percent of the total cost of each such contract, to be calculated at the time agencies or public benefit corporations enter into a new contract or if a contract is amended. The provisions of this bill became effective August 2, 2005.

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

OSC will report to DOL on all construction-related ("D") contracts approved during the month, including contract amendments, and then DOL will bill agencies the appropriate assessment monthly. An agency may then make a determination if any of the billed contracts are exempt and so note on the bill submitted back to DOL. For any instance where an agency is unsure if a contract is or is not exempt, they can call the Bureau of Public Work at the number noted below for a determination. Payment by check or journal voucher is due to DOL within thirty days from the date of the billing. DOL will verify the amounts and forward them to OSC for processing.

For those contracts which are not approved or administered by the Comptroller, monthly reports and payments for deposit into the Public Work Enforcement Fund must be provided to the Administrative Finance Bureau at the DOL within 30 days of the end of each month or on a payment schedule mutually agreed upon with DOL.

Reports should contain the following information:

- Name and billing address of State agency or public benefit corporation;
- State agency or public benefit corporation contact and phone number;
- Name and address of contractor receiving the award;
- Contract number and effective dates;
- Contract amount and PWEF assessment charge (if contract amount has been amended, reflect increase or decrease to original contract and the adjustment in the PWEF charge); and
- Brief description of the work to be performed under each contract.

Checks and Journal Vouchers, payable to the "New York State Department of Labor" should be sent to:

Department of Labor
Administrative Finance Bureau-PWEF Unit
Building 12, Room 464
State Office Campus
Albany, NY 12226

Any questions regarding billing should be directed to NYSDOL's Administrative Finance Bureau-PWEF Unit at (518) 457-3624 and any questions regarding Public Work Contracts should be directed to the Bureau of Public Work at (518) 457-5589.

NEW YORK STATE OF OPPORTUNITY. Department of Labor

Required Notice under Article 25-B of the Labor Law

Attention All Employees, Contractors and Subcontractors: You are Covered by the Construction Industry Fair Play Act

The law says that you are an employee unless:

- You are free from direction and control in performing your job, **and**
- You perform work that is not part of the usual work done by the business that hired you, **and**
- You have an independently established business.

Your employer cannot consider you to be an independent contractor unless all three of these facts apply to your work.

It is against the law for an employer to misclassify employees as independent contractors or pay employees off the books.

Employee Rights: If you are an employee, you are entitled to state and federal worker protections. These include:

- Unemployment Insurance benefits, if you are unemployed through no fault of your own, able to work, and otherwise qualified,
- Workers' compensation benefits for on-the-job injuries,
- Payment for wages earned, minimum wage, and overtime (under certain conditions),
- Prevailing wages on public work projects,
- The provisions of the National Labor Relations Act, and
- A safe work environment.

It is a violation of this law for employers to retaliate against anyone who asserts their rights under the law. Retaliation subjects an employer to civil penalties, a private lawsuit or both.

Independent Contractors: If you are an independent contractor**, you must pay all taxes and Unemployment Insurance contributions required by New York State and Federal Law.**

Penalties for paying workers off the books or improperly treating employees as independent contractors:

• **Civil Penalty**	First offense: Up to $2,500 per employee Subsequent offense(s): Up to $5,000 per employee
• **Criminal Penalty**	First offense: Misdemeanor - up to 30 days in jail, up to a $25,000 fine and debarment from performing public work for up to one year. Subsequent offense(s): Misdemeanor - up to 60 days in jail or up to a $50,000 fine and debarment from performing public work for up to 5 years.

If you have questions about your employment status or believe that your employer may have violated your rights and you want to file a complaint, call the Department of Labor at (866) 435-1499 or send an email to dol.misclassified@labor.ny.gov. All complaints of fraud and violations are taken seriously. You can remain anonymous.

Employer Name:

IA 999 (09/16)

WE ARE YOUR DOL

NEW YORK STATE Department of Labor

New York State Department of Labor
Bureau of Public Work

Attention Employees

THIS IS A:

PUBLIC WORK PROJECT

If you are employed on this project as a **worker, laborer, or mechanic** you are entitled to receive the **prevailing wage and supplements rate** for the classification at which you are working.

Your pay stub and wage notice received upon hire must clearly state your wage rate and supplement rate.

Chapter 629 of the Labor Laws of 2007:

These wages are set by law and must be posted at the work site. They can also be found at: https://dol.ny.gov/bureau-public-work

If you feel that you have not received proper wages or benefits, please call our nearest office.*

Albany	(518) 457-2744	Patchogue	(631) 687-4882
Binghamton	(607) 721-8005	Rochester	(585) 258-4505
Buffalo	(716) 847-7159	Syracuse	(315) 428-4056
Garden City	(516) 228-3915	Utica	(315) 793-2314
New York City	(212) 932-2419	White Plains	(914) 997-9507
Newburgh	(845) 568-5287		

* For New York City government agency construction projects, please contact the Office of the NYC Comptroller at (212) 669-4443, or www.comptroller.nyc.gov – click on Bureau of Labor Law.

Contractor Name: _____

Project Location: _____

Requirements for OSHA 10 Compliance

Article 8 §220-h requires that when the advertised specifications, for every contract for public work, is $250,000.00 or more the contract must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training “prior to the performing any work on the project.”

The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (*Note: Completion cards do not have an expiration date.)*
- Training roster, attendance record of other documentation from the certified trainer pending the issuance of the card.
- Other valid proof

**A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-457-5589.

WICKS

Public work projects are subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work, when the total project's threshold is $3 million in Bronx, Kings, New York, Queens and, Richmond counties; $1.5 million in Nassau, Suffolk and Westchester counties; and $500,000 in all other counties.

For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or the use of a Project Labor Agreement (PLA), and must be open to public inspection.

Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.

The Commissioner of Labor shall have the power to enforce separate specification requirement s on projects, and may issue stop-bid orders against public owners for non-compliance.

Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.

Contractors must pay subcontractors within a 7 days period.

(07.19)

Introduction to the Prevailing Rate Schedule

Information About Prevailing Rate Schedule

This information is provided to assist you in the interpretation of particular requirements for each classification of worker contained in the attached Schedule of Prevailing Rates.

Classification

It is the duty of the Commissioner of Labor to make the proper classification of workers taking into account whether the work is heavy and highway, building, sewer and water, tunnel work, or residential, and to make a determination of wages and supplements to be paid or provided. It is the responsibility of the public work contractor to use the proper rate. If there is a question on the proper classification to be used, please call the district office located nearest the project. District office locations and phone numbers are listed below.
Prevailing Wage Schedules are issued separately for "General Construction Projects" and "Residential Construction Projects" on a county-by-county basis.

General Construction Rates apply to projects such as: Buildings, Heavy & Highway, and Tunnel and Water & Sewer rates.
Residential Construction Rates generally apply to construction, reconstruction, repair, alteration, or demolition of one family, two family, row housing, or rental type units intended for residential use.
Some rates listed in the Residential Construction Rate Schedule have a very limited applicability listed along with the rate. Rates for occupations or locations not shown on the residential schedule must be obtained from the General Construction Rate Schedule. Please contact the local Bureau of Public Work office before using Residential Rate Schedules, to ensure that the project meets the required criteria.

*Contractor Registry (LL 220-I):
Labor Law Section 220-i requires that contractors obtain a Contractor Registry certificate of registration prior to bidding on or commencing work on a public or private project subject to prevailing wage requirements. Subcontractors also are prohibited from commencing work on covered employment unless they have received a Contractor Registry certificate. Contractors are required to submit their Certificate of Registration with their bid materials. A public database is available online to confirm registration at data.ny.gov to confirm registration validity. For additional information on how to register and the requirements, visit https://dol.ny.gov/public-work-contractor-and-subcontractorregistry-
landing.

Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. Payrolls must be maintained for at least three (3) years from the projects date of completion. Additionally, as per Article 6 of the Labor Law, contractors and subcontractors are required to establish, maintain, and preserve for not less that six (6) years, contemporaneous, true, and accurate payroll records.

At a minimum, payrolls must show the following information for each person employed on a public work project: Name; Address, Last 4 Digits of Social Security number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid or provided, and Daily and weekly number of hours worked in each classification.

Payroll records and transcripts are required to be kept on site during all the time that work under that contract is being performed.

NOTE: *For more detailed information regarding Article 9 prevailing wage contracts, please refer to "General Provisions of Laws Covering Workers on Article 9 Public Work Building Service Contracts".*

If you have any questions concerning the attached schedule or would like additional information, please write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12240

OR

Contact the nearest BUREAU of PUBLIC WORK District Office

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518

Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

Overtime

At a minimum, all work performed on a public work project in excess of eight hours in any one day or more than five days in any workweek is overtime. The specific overtime requirements for each trade or occupation on a public work project may differ. Specific overtime requirements for each trade or occupation are contained in the prevailing rate schedules.

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays.

The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. Although in most cases the payment or provision of supplements is straight time for all hours worked, some classifications require the payment or provision of supplements, or a portion of the supplements, to be paid or provided at a premium rate for premium hours worked. Supplements may also be required to be paid or provided on paid holidays, regardless of whether the day is worked. The Overtime Codes and Notes listed on the particular wage classification will indicate these conditions as required.

Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year. Please Note: Updates to the Wage Schedule shall be made on a quarterly basis.

All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website (www.labor.ny.gov) for current wage rate information.

Shift Work

If the timeline of the contract requires shift work be performed to meet deadlines, the BPWE will enforce the shift work rate as the required rate on the project whether or not shift work is specifically addressed in the contract.

Paid Prenatal Leave

Every employer shall be required to provide to its employees twenty hours of paid prenatal personal leave during any fifty-two week calendar period. Paid prenatal personal leave shall mean leave taken for the health care services received by an employee during their pregnancy or related to such pregnancy, including physical examinations, medical procedures, monitoring and testing, and discussions with a healthcare provider related to the pregnancy. Paid prenatal personal leave may be taken in hourly increments. Benefits for paid prenatal personal leave shall be paid in hourly installments. Employees shall receive compensation at the employee's regular rate of pay, or the applicable minimum wage established by the labor law, whichever is greater, for the use of Paid Prenatal leave.

Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1,1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before a second Apprentice is allowed. The last ratio repeats indefinitely. Therefore, three more Journeyworkers must be present before a third Apprentice can be hired, and so on.

Please call Apprentice Training Central Office at (518) 457-6820 if you have any questions.

Title (Trade)	Ratio
Boilermaker (Construction)	1:1,1:4

Boilermaker (Shop)	1:1,1:3
Carpenter (Bldg.,H&H, Pile Driver/Dockbuilder)	1:1,1:4
Carpenter (Residential)	1:1,1:3
Electrical (Outside) Lineman	1:1,1:2
Electrician (Inside)	1:1,1:3
Elevator/Escalator Construction & Modernizer	1:1,1:2
Glazier	1:1,1:3
Insulation & Asbestos Worker	1:1,1:3
Iron Worker	1:1,1:4
Laborer	1:1,1:3
Mason	1:1,1:4
Millwright	1:1,1:4
Op Engineer	1:1,1:5
Painter	1:1,1:3
Plumber & Steamfitter	1:1,1:3
Roofer	1:1,1:2
Sheet Metal Worker	1:1,1:3
Sprinkler Fitter	1:1,1:2

If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12226

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518
Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Westchester County General Construction

Boilermaker — 08/01/2026

JOB DESCRIPTION Boilermaker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES

Per Hour:	07/01/2026	01/01/2027
Boilermaker	$ 70.38	$ 71.88
Repairs & Renovations	70.38	71.88

Repairs & Renovation: Includes Repairing, Renovating, and Replacement of parts to an existing unit(s).

SUPPLEMENTAL BENEFITS
Per Hour:

Boilermaker	33.5% of Hourly
Repair & Renovations	Wage Paid + $26.85

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay.

OVERTIME PAY
See (*B, O, **U) on OVERTIME PAGE
Note:* Includes 9th & 10th hours, double for 11th or more.
** Labor Day ONLY, if worked.

Repairs & Renovation see (B,E,Q) on OT Page

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 12, 15, 25, 26, 29) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1/2) Year Terms at the following percentage of Boilermaker's wage per hour:

1st	2nd	3rd	4th	5th	6th	7th
65%	70%	75%	80%	85%	90%	95%

SUPPLEMENTAL BENEFITS:

33.5% of Hourly Wage Paid Plus Amount Below:

1st	2nd	3rd	4th	5th	6th	7th
$20.36	$21.28	$22.22	$23.12	$24.07	$25.00	$25.93

NOTE: "Hourly Wage Paid" shall include any and all premium(s)

4-5

Broadband — 08/01/2026

JOB DESCRIPTION Broadband **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

PARTIAL COUNTIES
Orange: Entire County except Village of Greenwood Lake, Village of Highland Falls, Town of Tuxedo, and Town of Patterson

WAGES
NOTE: Applies to all public work and covered private projects, including those receiving ConnectAll funding subject to New York State Labor Law §224-E, solicited on or after July 1,2025. For all other projects solicited prior to July 1,2025 please see LINEMAN ELECTRICIAN(1)-TELEDATA

Per Hour:	07/01/2026	08/04/2026
Field Tech Install/Repair*	$ 55.59	$ 57.26

For outside work (excluding installation on building construction/alteration/renovation projects), stopping at first point of attachment (demarcation), installing/maintaining/repairing broadband internet service.

"Broadband", "Broadband Service", or "Broadband Internet" means mass-market retail service by wire or radio that provides the capability to transmit data to and receive data from all or substantially all internet endpoints, including any capabilities that are incidental to and enable the operation of the communications service, but excluding dial-up internet access service.

*NOTE: EXCLUDES work within ten(10) feet of High Voltage (600 Volts and over) transmussion lines. Please see LINEMAN rates.
*NOTE: Does not include the operation of equipment. Please see OPERATING ENGINEER rates.
*NOTE: Does not include groundmen/flagger/flagmen. Please see LABORER/LABORER-HEAVY/HIGHWAY rates.

SUPPLEMENTAL BENEFITS
Per Hour:

$ 23.54

OVERTIME PAY
See (B, K, *R) on OVERTIME PAGE
*Two and one half times the hourly rate after the 8th hour

HOLIDAY
Paid: See (5, 6, 7, 11, 12) on HOLIDAY PAGE
Overtime: See (5, 6, 7, 11, 12) on HOLIDAY PAGE

4-CWA-Dist1

Carpenter — 08/01/2026

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES
Per hour: 07/01/2026

Piledriver	$ 62.59 + 10.16*
Dockbuilder	$ 62.59 + 10.16*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker $ 47.48

OVERTIME PAY
See (B, E2, O) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE.

Paid: for 1st & 2nd yr.
Apprentices See (5,6,11,13,25)

Overtime: See (5,6,11,13,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES
Wages per hour
(1)year terms:

1st	2nd	3rd	4th
$ 28.98 + 5.66*	$ 34.58 + 5.66*	$ 42.96 + 5.66*	$ 51.35 + 5.66*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:

All Terms: $ 34.03

8-1556 Db

Carpenter — 08/01/2026

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES
Per hour: 07/01/2026

Carpet/Resilient
Floor Coverer $ 60.05
+ 8.39*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

INCLUDES HANDLING & INSTALLATION OF ARTIFICIAL TURF AND SIMILAR TURF INDOORS/OUTDOORS.

SUPPLEMENTAL BENEFITS
Per hour:
$ 42.24

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (18, 19) on HOLIDAY PAGE.

Paid for 1st & 2nd yr.
Apprentices See (5,6,11,13,16,18,19,25)
Overtime: See (5,6,11,13,16,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES
Wage per hour - (1) year terms:

1st	2nd	3rd	4th
$ 26.54	$ 29.60	$ 34.05	$ 42.40
+ 2.00*	+ 2.54*	+ 3.00*	+ 3.94*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:

1st	2nd	3rd	4th
$ 16.91	$ 18.13	$ 21.67	$ 22.98

8-2287

Carpenter 08/01/2026

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES
Per Hour: 07/01/2026

Marine Construction:

Marine Diver $ 77.46
+ 10.16*

Marine Tender $ 57.00
+ 10.16*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime

SUPPLEMENTAL BENEFITS
Per Hour:

Journeyworker $ 47.48

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (18, 19) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 13, 16, 18, 19, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:
One (1) year terms.

1st year	$ 28.98
	+ 5.66*
2nd year	34.58
	+ 5.66*
3rd year	42.96
	+ 5.66*
4th year	51.35
	+ 5.66*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits
Per Hour:

All terms	$ 34.03

8-1456MC

Carpenter — 08/01/2026

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES
Per hour: 07/01/2026

Building

Millwright	$ 62.03
	+ 13.12*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS
Per hour:

Millwright	$ 46.66

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (18,19) on HOLIDAY PAGE.

Overtime: See (5,6,8,11,13,15,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES
Wages per hour:
One (1) year terms:

1st.	2nd.	3rd.	4th.
$ 33.04	$ 38.89	$ 44.74	$ 56.44
+ 7.08*	+ 8.25*	+ 9.42*	+ 11.76*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:
One (1) year terms:

1st.	2nd.	3rd.	4th.
$ 31.81	$ 34.34	$ 37.52	$ 41.94

8-740.1

Carpenter — 08/01/2026

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES
Per Hour:

	07/01/2026
Timberman	$ 57.59
	+ 10.42*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS
Per Hour:
$ 46.79

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Overtime: See (5, 6, 11, 13, 25) on HOLIDAY PAGE
Paid: See (1) on HOLIDAY PAGE.

Paid: for 1st & 2nd yr.
Apprentices See (5,6,11,13,25)

Overtime: See (5,6,11,13,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES
Wages per hour:
One (1) year terms:

1st	2nd	3rd	4th
$ 26.96	$ 32.07	$ 39.72	$ 47.38
+ 5.71*	+ 5.71*	+ 5.71*	+ 5.71*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:
All terms $ 33.78

8-1556 Tm

Carpenter — 08/01/2026

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Westchester

PARTIAL COUNTIES
Orange: South of but including the following, Waterloo Mills, Slate Hill, New Hampton, Goshen, Blooming Grove, Mountainville, east to the Hudson River.
Putnam: South of but including the following, Cold Spring, TompkinsCorner, Mahopac, Croton Falls, east to Connecticut border.
Suffolk: West of Port Jefferson and Patchogue Road to Route 112 to the Atlantic Ocean.

WAGES

Per hour:	07/01/2026	10/18/2026
Core Drilling:		
Driller	$ 48.78	Additional
	+ 3.85*	+ $2.63
Driller Helper	$ 38.15	
	+ 3.85*	

Note: Hazardous Waste Pay Differential:
For Level C, an additional 15% above wage rate per hour
For Level B, an additional 15% above wage rate per hour
For Level A, an additional 15% above wage rate per hour
Note: Additional $3.00 per hour to be paid when required to work on water

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS
Per hour:

Driller and Helper $ 32.37

OVERTIME PAY
See (B, G, P) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 13, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 13, 25) on HOLIDAY PAGE

8-1536-CoreDriller

Carpenter - Building / Heavy&Highway — 08/01/2026

JOB DESCRIPTION Carpenter - Building / Heavy&Highway **DISTRICT** 11

ENTIRE COUNTIES
Putnam, Rockland, Westchester

WAGES
WAGES:(per hour)
Applies to CARPENTER BUILDING/HEAVY & HIGHWAY/TUNNEL:

	07/01/2026
Base Wage	$ 43.68
	+$6.69*

*For all hours paid straight or premium.

SHIFT WORK
SHIFT DIFFERENTIAL: When it is mandated by a Government Agency irregular or off shift can be worked. The Carpenter shall receive an additional fifteen percent (15%) of wage plus applicable benefits.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker $ 33.11

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
BUILDING:
Paid: See (1) on HOLIDAY PAGE.

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE.
- Holidays that fall on Sunday will be observed Monday.

HEAVY&HIGHWAY/TUNNEL:
Paid: See (5, 6, 25) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
- Holidays that fall on Sunday will be observed Monday
- Must be employed during the five (5) work days immediately preceding a holiday or during the five (5) work days following the paid holiday to receive holiday pay
- If an employee is entitled to a paid holiday, the employee is paid the Holiday wage and supplemental benefits whether they work or not. If an employee works the Holiday, the employee will receive holiday pay (including supplemental benefits), plus the applicable premium wage for working the Holiday. If an employee works in excess of 8 hours on Holiday, then benefits will be paid for any hours in excess of 8 hours.

REGISTERED APPRENTICES
1 year terms at the following wage rates:

1st	2nd	3rd	4th
$ 21.84	$ 26.21	$ 30.58	$ 34.94
+3.86*	+3.86*	+3.86*	+3.86*

*For all hours paid straight or premium

SUPPLEMENTAL BENEFITS per hour:

All terms $ 17.76

11-279.1B/HH

Electrician — 08/01/2026

JOB DESCRIPTION Electrician **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, New York, Queens, Richmond, Westchester

WAGES

Per hour:	07/01/2026	03/12/2027
Service Technician	$ 39.45	$ 40.45

Service and Maintenance on Alarm and Security Systems.

Maintenance, repair and /or replacement of defective (or damaged) equipment on, but not limited to, Burglar - Fire - Security - CCTV - Card Access - Life Safety Systems and associated devices. (Whether by service contract of T&M by customer request.)

SUPPLEMENTAL BENEFITS

Per hour:		
Journeyworker:	$ 23.33	$ 24.11

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 11, 15, 16, 17, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 17, 25, 26) on HOLIDAY PAGE

9-3H

Electrician 08/01/2026

JOB DESCRIPTION Electrician **DISTRICT** 8

ENTIRE COUNTIES
Westchester

WAGES

Per hour:	07/01/2026	04/15/2027
Electrician/A-Technician	$ 58.75	$ 60.75
Teledata	58.75	60.75

See "M" rate for all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls.

Note: On a job where employees are required to work on bridges over navigable waters, transmission towers, light poles, bosun chairs, swinging scaffolds , etc. 40 feet or more above the water or ground or under compressed air, or tunnel projects under construction or where assisted breathing apparatus is required, they will be paid at the rate of time and one-half for such work except on normal pole line or building construction work.

SUPPLEMENTAL BENEFITS

Per hour:		
Journeyworker	$ 65.07	$ 67.55

OVERTIME PAY
See (A, G, *J, P) on OVERTIME PAGE
*NOTE: Emergency work on Sunday and Holidays is at the time and one-half overtime rate.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE
Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

REGISTERED APPRENTICES
(1) year terms at the following wage rates:

	07/01/2026	04/15/2027
1st term	$ 18.00	$ 18.00
2nd term	19.50	19.50
3rd term	21.00	21.00
4th term	22.50	22.50
MIJ 1-12 months	28.25	28.25

MIJ 13-18 months	31.75	31.75

Supplemental Benefits per hour:

	07/01/2026	04/15/2027
1st term	$ 15.23	$ 15.73
2nd term	18.75	19.25
3rd term	19.77	20.27
4th term	20.78	21.28
MIJ 1-12 months	16.56	17.06
MIJ 13-18 months	17.02	17.52

8-3/W

Electrician — 08/01/2026

JOB DESCRIPTION Electrician **DISTRICT** 8

ENTIRE COUNTIES
Westchester

WAGES
Per hour

	07/01/2026	04/15/2027
Electrician - M	$ 34.25	$ 34.25

"M" rate for all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls.

SUPPLEMENTAL BENEFITS

	07/01/2026	04/15/2027
Electrician - M	$ 17.35	$ 17.85

OVERTIME PAY
See (B, G, *J, P) on OVERTIME PAGE
*Note: Emergency work on Sunday and Holidays is at the time and one-half overtime rate.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE
Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

8-3m

Elevator Constructor — 08/01/2026

JOB DESCRIPTION Elevator Constructor **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

PARTIAL COUNTIES
Rockland: Entire County except for the Township of Stony Point
Westchester: Entire County except for the Townships of Bedford, Lewisboro, Cortland, Mt. Kisco, North Salem, Pound Ridge, Somers and Yorktown.

WAGES
Per hour:

	07/01/2026	03/17/2027
Elevator Constructor	$ 86.43	$ 89.76
Modernization & Service/Repair	$ 68.06	$ 70.72

SUPPLEMENTAL BENEFITS
Per Hour:

Elevator Constructor	$ 48.96	$ 50.27

Modernization & Service/Repairs	$ 47.73	$ 49.00

OVERTIME PAY
Constructor See (D, M, T) on OVERTIME PAGE.

Modern/Service See (B, E5, P) on OVERTIME PAGE.

HOLIDAY
Paid: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
WAGES PER HOUR:

6 MONTH TERMS:

1st Term*	2nd & 3rd Term*	4th & 5th Term	6th & 7th Term	8th & 9th Term
50%	50%	55%	65%	75%

* Note: 1st, 2nd, 3rd Terms are based on average of the Constructor, the Modernization and the Service/Repair wage.
Terms 4 thru 9 Based on the Journeyworker's wage of classification they are working in.

SUPPLEMENTAL BENEFITS:

	07/01/2026	03/17/2027
Elevator Constructor		
1st Term	$0.00	$ 0.00
2nd & 3rd Term	37.66	38.42
4th & 5th Term	38.80	39.62
6th & 7th Term	40.60	41.50
8th & 9th Term	42.39	43.39
Modernization & Service/Repair		
1st Term	$0.00	$ 0.00
2nd & 3rd Term	37.63	38.39
4th & 5th Term	38.37	39.17
6th & 7th Term	40.09	40.98
8th & 9th Term	41.81	42.79

Elevator Constructor — 08/01/2026

JOB DESCRIPTION Elevator Constructor **DISTRICT** 1

ENTIRE COUNTIES
Columbia, Dutchess, Greene, Orange, Putnam, Sullivan, Ulster

PARTIAL COUNTIES
Delaware: Towns of Andes, Bovina, Colchester, Davenport, Delhi, Harpersfield, Hemdon, Kortright, Meredith, Middletown, Roxbury, Hancock & Stamford
Rockland: Only the Township of Stony Point.
Westchester: Only the Townships of Bedford, Lewisboro, Cortland, Mt. Kisco, North Salem, Pound Ridge, Somers and Yorktown.

WAGES

Per Hour	07/01/2026	01/01/2027
Mechanic	$ 76.12	$ 79.37
Helper	70% of Mechanic Wage Rate	70% of Mechanic Wage Rate

SUPPLEMENTAL BENEFITS
Per hour

Journeyworker	$ 38.985*	$ 39.535*

*NOTE: Add 6% of regular hourly rate for all hours worked. Add 8% of regular hourly rate if more than 5 years of service.

OVERTIME PAY
See (D, O) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 15, 16) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE

Note: When a paid holiday falls on Saturday, it shall be observed on Friday. When a paid holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES
WAGES per hour: 1 year terms at the following percentage of the Elevator Constructor Mechanic wage.

0-6 months	6-12 months	2nd year	3rd year	4th year
50%	55%	65%	70%	80%

SUPPLEMENTAL BENEFITS per hour:

0-6 months: 6% of the regular hourly apprentice rate paid, no additional supplemental benefits.

All other terms: Same as Journeyworker

1-138

Glazier — 08/01/2026

JOB DESCRIPTION Glazier **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES
Per hour:

	07/01/2026	11/01/2026
Glazier	$ 66.22	$ 67.20
Scaffolding, including swing scaffold	71.22	72.20
*Mechanical Equipment	67.23	68.20
**Repair & Maintenance	32.82	33.47

*Mechanical equipment, scissor jacks, man lifts, booms & buckets 30' or more, but not pipe scaffolding.
**Repair & Maintenance- All repair & maintenance work on a particular building whenever performed, where the total cumulative Repair & Maintenance contract value is under $202,000.

SUPPLEMENTAL BENEFITS
Per hour:

Glazier, Scaffolding and Mechanical Equipment	$ 44.81	$ 45.74
Repair & Maintenance	$ 26.01	$26.37

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE
For 'Repair & Maintenance' see (B, B2, I, S) on overtime page.

HOLIDAY
Paid: See (5, 6, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE
For 'Repair & Maintenance'
Paid: See(5, 6, 16, 25)
Overtime: See(5, 6, 16, 25)

REGISTERED APPRENTICES
Wage per hour:
(1) year terms at the following wage rates:

	07/01/2026	11/01/2026
1st term	$ 23.68	$ 24.06
2nd term	32.23	32.74
3rd term	42.89	43.55
4th term	52.47	53.23

Supplemental Benefits:
(Per hour)

1st term	$ 20.18	$ 20.56
2nd term	28.85	29.39
3rd term	34.77	35.45
4th term	38.18	38.95

8-1087 (DC9 NYC)

Insulator - Heat & Frost — 08/01/2026

JOB DESCRIPTION Insulator - Heat & Frost **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Rockland, Westchester

WAGES

Per hour:	07/01/2026
Insulator/Fire Stop Work*	$ 64.27
Discomfort & Additional Training**	67.32

*Applies on all exclusive Fire Stop Work (When contract is for Fire Stop work only). No apprentices on these contracts only.

**Applies to work requiring; garb or equipment worn against the body not customarily worn by insulators; psychological evaluation ;special training, including but not limited to "Yellow Badge" radiation training

Note: Additional $10 a day for work 30 feet or more above floor or ground level.

SUPPLEMENTAL BENEFITS

Per hour:	
Insulator/Fire Stop Journeyworker:	$ 39.85
Discomfort & Additional Training:	$ 41.89

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Note: Last working day preceding Christmas and New Years day, workers shall work no later than 12:00 noon and shall receive 8 hrs pay.

Overtime: See (2*, 4, 6, 16, 25) on HOLIDAY PAGE.
*Note: Labor Day triple time if worked.

REGISTERED APPRENTICES
(1) year terms:

Insulator Apprentices:

1st	2nd	3rd	4th
$ 35.09	$ 40.92	$ 46.76	$ 52.60

Discomfort & Additional Training Apprentices:

1st	2nd	3rd	4th
$ 36.61	$ 42.75	$ 48.89	$ 55.04

Supplemental Benefits paid per hour:

Insulator Apprentices:

1st term	$ 20.33
2nd term	24.23
3rd term	28.13
4th term	32.05

Discomfort & Additional Training Apprentices:

1st term	$ 21.34
2nd term	25.46
3rd term	29.56

4th term	33.68

8-91

Ironworker **08/01/2026**

JOB DESCRIPTION Ironworker **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per Hour:	07/01/2026	01/01/2027 Additional
Stone Derrickmen Rigger	$ 78.46	$ 1.84
Stone Handset Derrickman	$ 76.51	$ 1.64

SUPPLEMENTAL BENEFITS

Per hour:	
Stone Derrickmen Rigger	$ 49.02
Stone Handset Derrickman	$ 48.01

OVERTIME PAY
See (B, D1, *E, Q, **V) on OVERTIME PAGE
*Time and one-half shall be paid for all work on Saturday up to eight (8) hours and double time shall be paid for all work thereafter.
** Benefits same premium as wages on Holidays only

HOLIDAY
Paid: See (18) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 25) on HOLIDAY PAGE
Work stops at schedule lunch break with full day's pay.

REGISTERED APPRENTICES
Wage per hour:

Stone Derrickmen Rigger:

	1st	2nd	3rd	4th
07/01/2026	$ 38.98	$ 55.17	$ 61.37	$ 67.56

Supplemental Benefits:
Per hour:

07/01/2026	$ 24.77	$ 37.34	$ 37.34	$ 37.34

Stone Handset:

1/2 year terms at the following hourly wage rate:

	1st	2nd	3rd	4th
07/01/2026	$ 37.51	$ 53.51	$ 59.51	$ 65.51

Supplemental Benefits:
Per hour:

07/01/2026	$ 24.75	$ 36.90	$ 36.90	$ 36.90

9-197D/R

Ironworker **08/01/2026**

JOB DESCRIPTION Ironworker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per Hour:	07/01/2026	01/01/2027 Additional
Ornamental	$ 48.65	$ 1.05*
Chain Link Fence	48.65	

Guide Rail 48.65

* To be allocated at a later date.

SUPPLEMENTAL BENEFITS
Per hour:
Journeyworker: $ 68.84

OVERTIME PAY
See (B, B1, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
1 year terms at the following wages per hour:

1st	2nd	3rd	4th
$ 25.98	$ 28.45	$ 30.80	$ 34.39

Supplemental Benefits per hour:

1st	2nd	3rd	4th
$ 17.29	$ 18.29	$ 19.29	$ 21.29

4-580-Or

Ironworker — 08/01/2026

JOB DESCRIPTION Ironworker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES
PER HOUR:

	07/01/2026	01/01/2027
Ironworker:		Additional
Structural, Bridges, Machinery	$ 59.45	1.38*

* To be allocated at a later date.

SUPPLEMENTAL BENEFITS
Per hour paid:

Journeyman $ 95.26

OVERTIME PAY
See (B, B1, Q, *V) on OVERTIME PAGE
*NOTE: Benefits are calculated for every hour paid.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 18, 19) on HOLIDAY PAGE

REGISTERED APPRENTICES
6 month terms at the following wages per hour:

	1st	2nd	3rd-6th
07/01/2026	$ 30.87	$ 31.47	$ 32.08

Supplemental Benefits

PER HOUR PAID: $ 69.08

4-40/361-Str

Ironworker — 08/01/2026

JOB DESCRIPTION Ironworker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

PARTIAL COUNTIES
Rockland: Southern section - south of Convent Road and east of Blue Hills Road.

WAGES

Per hour:	07/01/2026
Reinforcing & Metal Lathing:	$ 58.85

SUPPLEMENTAL BENEFITS

Per hour:	
Reinforcing & Metal Lathing	$ 46.42

OVERTIME PAY
See (B, E, Q, *X) on OVERTIME PAGE
Wages Per Hour:

At Time & One Half	$ 87.35
At Double Time	115.85

Supplemental Benefit Premiums for Overtime Hours worked:

At Time & One Half	$ 52.77
At Double Time	59.27

*Only $24.00 per hour for non worked hours

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 11, 13, 20, 21, 22, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1) year terms at the following Wages Per Hour:

	1st	2nd	3rd	4th
Straight time	$ 22.55	$ 25.00	$ 28.00	$ 30.00
At Time & One Half	33.05	36.60	41.10	44.10
At Double Time	46.65	51.80	57.80	61.80

SUPPLEMENTAL BENEFITS Per Hour:

1st	2nd	3rd	4th
$ 18.17	$ 18.22	$ 17.22	$ 17.22

4-46Reinf

Laborer - Building — 08/01/2026

JOB DESCRIPTION Laborer - Building **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Westchester

WAGES

Per hour	07/01/2026
Laborer	$ 46.26
"Base Wage"	$ 46.16**
Laborer/Asbestos & Hazardous Materials Removal	$ 50.35*
"Base Wage"	$ 50.25**

* Abatement/Removal of:
- Lead based or lead containing paint on materials to be repainted is classified as Painter.
- Asbestos containing roofs and roofing material is classified as Roofer.

** Overtime premiums are calculated using Laborer "Base Wage"

NOTE: Upgrade/Material condition work plan for work performed during non-outage under a wage formula of 90% wage/100% fringe benefits at nuclear power plants.

SUPPLEMENTAL BENEFITS

Per hour:	07/01/2026
Journeyworker	$ 34.10

OVERTIME PAY
See (B, E, E2, Q, *V) on OVERTIME PAGE
*Note: For Sundays and Holidays worked benefits are at the same premium as wages.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE
Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

REGISTERED APPRENTICES
LABORER ONLY
Hourly terms at the following wage:

	Level A	Level B	Level C	Level D
	0-1000	1001-2000	2001-3000	3001-4000
07/01/2026	$ 30.60	$ 35.35	$ 40.05	$ 42.05

Supplemental Benefits per hour:

Apprentices	
All terms	$ 25.95

8-235/B

Laborer - Heavy&Highway **08/01/2026**

JOB DESCRIPTION Laborer - Heavy&Highway **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Westchester

WAGES
PUTNAM: APPLIES TO ALL HEAVY & HIGHWAY WORK EXCLUDING HIGHWAYS, STREETS, AND BRIDGES

GROUP I: Blaster, Quarry Master, Curbs/Asphalt Screedman, Pipe Jacking and Boring Operations Operator, Qualified Dead Condition Pipe Fuser (B Mechanic)

GROUP II: Burner, Drillers(jumbo, joy, wagon, air track, hydraulic), Drill Operator, Self Contained Rotary Drill, Curbs, Raker, Bar Person, Concrete Finisher.

GROUP III: Pavement Breakers, Jeeper Operator, Jack Hammer, Pneumatic Tools (all), Gas Driller, Guniting, Railroad Spike Puller, Pipelayer, Chain Saw, Deck winches on scows, Power Buggy Operator, Power Wheelbarrow Operator, Bar Person Helper, Compressed Airlance, Water Jet Lance.

GROUP IV: Concrete Laborers, Asph. Worker, Rock Scaler, Vibrator Oper., Bit Grinder, Air Tamper, Pumps, Epoxy (adhesives, fillers and troweled on), Barco Rammer, Concrete Grinder, Crack Router Operator, Guide Rail-digging holes and placing concrete and demolition when not to be replaced, distribution of materials and tightening of bolts.

GROUP V: Drillers Helpers, Common Laborer, Mason Tenders, Signal Person, Pit Person, Truck Spotter, Powder Person, Landscape/Nursery Person, Dump Person, Temp. Heat.

GROUP VIA: Asbestos/Toxic Waste Laborer-All removal (Roads, Tunnels, Landfills, etc.) Confined space laborer, Bio-remediation, Phyto-remediation, Lead or Hazardous material, Abatement Laborer.

Wages:(per hour)	07/01/2026
GROUP I	$ 53.95*
GROUP II	52.49*
GROUP III	52.05*
GROUP IV	51.68*
GROUP V	51.30*

GROUP VIA	53.46*
Operator Qualified	
Gas Mechanic(A Mech)	64.76*
Operator Qualified	
Gas Mechanic(1st yr.)	57.95*
Flagperson	44.43*

*NOTE: To calculate overtime premiums, deduct $0.12 from above wages

SHIFT WORK
A shift premium will be paid on Public Work contracts for off-shift or irregular shift work when mandated by the NYS D.O.T. or other Governmental Agency contracts. Employees shall receive an additional 15% per hour above current rate for all off-shift and irregular shift work. Premium pay shall be calculated using the 15% per hour differential as base rate.

SUPPLEMENTAL BENEFITS
Per hour:
Journeyworker: $ 30.58

OVERTIME PAY
See (B, E, P, R, S) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE
NOTE: For Holiday Overtime: 5, 6 - Code 'S' applies
For Holiday Overtime: 8, 15, 25, 26 - Code 'R' applies

REGISTERED APPRENTICES

1st term	2nd term	3rd term	4th term
1-1000hrs	1001-2000hrs	2001-3000hrs	3001-4000hrs
$ 33.35	$ 38.48	$ 43.61	$ 48.74

Supplemental Benefits per hour:
$ 26.42

8-60H/H

Laborer - Tunnel — 08/01/2026

JOB DESCRIPTION Laborer - Tunnel **DISTRICT** 11

ENTIRE COUNTIES
Columbia, Dutchess, Greene, Orange, Otsego, Putnam, Rockland, Sullivan, Ulster, Westchester

PARTIAL COUNTIES
Chenango: Townships of Columbus, Sherburne and New Berlin.
Delaware: Townships of Andes, Bovina, Middletown, Roxbury, Franklin, Hamden, Stamford, Delhi, Kortright, Harpersfield, Merideth and Davenport.

WAGES
Class 1: All support laborers/sandhogs working above the shaft or tunnel.

Class 2: All laborers/sandhogs working in the shaft or tunnel.

Class 4: Safety Miners

Class 5: Site work related to Shaft/Tunnel

WAGES: (per hour)

	07/01/2026
Class 1	$ 60.30
Class 2	62.45
Class 4	68.85
Class 5	53.15

Toxic and hazardous waste, lead abatement and asbestos abatement work will be paid an additional $ 3.00 an hour.

SUPPLEMENTAL BENEFITS
Per hour:

Benefit 1	$ 39.23
Benefit 2	55.66
Benefit 3	72.08

Benefit 1 applies to straight time hours, paid holidays not worked.
Benefit 2 applies to over 8 hours in a day (M-F) and Saturday hours worked.
Benefit 3 applies to Sunday and Holiday hours worked.

OVERTIME PAY
See (B, E, Q, X) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16, 25) on HOLIDAY PAGE
When a recognized Holidays falls on Saturday or Sunday, holidays falling on Saturday shall be recognized or observed on Friday and holidays falling on Sunday shall be recognized or observed on Monday. Employees ordered to work on the Saturday or Sunday of the holiday or on the recognized or the observed Friday or Monday for those holidays falling on Saturday or Sunday shall receive double time the established rate and benefits for the holiday.

REGISTERED APPRENTICES
FOR APPRENTICE RATES, refer to the appropriate Laborer Heavy & Highway wage rate contained in the wage schedule for the County and location where the work is to be performed.

11-17/60/235/754Tun

Lineman Electrician — 08/01/2026

JOB DESCRIPTION Lineman Electrician **DISTRICT** 6

ENTIRE COUNTIES
Westchester

WAGES
A Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors, assembly of all electrical materials, conduit, pipe or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

Crane Operators: Operation of any type of crane on line projects.
Crawler Backhoe: Operation of tracked excavator/crawler backhoe with 1/2 yard bucket or larger on line projects.
Digging Machine Operator: All other digging equipment and augering on line projects.

A Groundman/Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator equipment/operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/truck driver may assist in installing conduit, pipe, cables and equipment.

NOTE: Includes Teledata Work within ten (10) feet of High Voltage Transmission Lines. Also includes digging of holes for poles, anchors, footer, and foundations for electrical equipment.

-----Below rates applicable on all electrical overhead and underground distribution and maintenance work and overhead and underground transmission line work, electrical substations, switching structures, continuous pipe-type underground fluid or gas filled transmission conduit and cable installations, maintenance jobs or projects, railroad catenary installations and maintenance, third rail installations, the bonding of rails and the installation of fiber optic cable. Includes access matting for line work.

Per hour:	07/01/2026	05/03/2027	05/01/2028
Group A:			
Lineman, Tech, Welder	$ 67.64	$ 70.24	$ 73.01
Crane, Crawler Backhoe	67.64	70.24	73.01
Cable Splicer-Pipe Type	74.40	77.26	80.31
Cert. Welder-Pipe Type	71.02	73.75	76.66
Group B:			
Digging Mach Operator	$ 60.88	$ 63.22	$ 65.71
Group C:			
Tractor Trailer Driver	$ 57.49	$ 59.70	$ 62.06
Groundman, Truck Driver	54.11	56.19	58.41
Equipment Mechanic	54.11	56.19	58.41
Group D:			
Flagger	$ 37.20	$ 38.63	$ 40.16

Additional 3% per hour above regular rate for entire crew when a helicopter is used. This will increase to 5% on May 3, 2027.

SHIFT WORK

The following rates will apply on all contracting agency mandated multiple shifts of at least five (5) days duration worked between the hours listed below:

1ST SHIFT	8:00 AM TO 4:30 PM REGULAR RATE
2ND SHIFT	4:30 PM TO 1:00 AM REGULAR RATE PLUS 17.3%
3RD SHIFT	12:30 AM TO 9:00 AM REGULAR RATE PLUS 31.4%

SUPPLEMENTAL BENEFITS

Per hour:

	07/01/2026	05/03/2027	05/01/2028
Group A	$ 32.91*	$ 34.41*	$ 35.91*
Group B	$ 28.91*	$ 30.41*	$ 31.91*
Group C	$ 28.51*	$ 29.71*	$ 30.91*
Group D	$ 28.41*	$ 29.54*	$ 30.67*

*NOTE: Plus 7% of the hourly wage paid. The 7% is based on the straight time rate or the premium time rate.

OVERTIME PAY

See (B, E, Q, X) on OVERTIME PAGE. NOTE: Double time for emergency work designated by the Contracting Agency.
WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid	See (5, 6, 8, 15, 25) on HOLIDAY PAGE
Overtime	See (5, 6, 8, 15, 25) on HOLIDAY PAGE

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES

WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyworker's Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

	07/01/2026	05/03/2027	05/01/2028
All terms:	$ 28.41*	$ 29.54*	$ 30.67*

*NOTE: Plus 7% of the hourly wage paid. The 7% is based on the straight time rate or the premium time rate.

6-1249aWest

Lineman Electrician - Teledata — 08/01/2026

JOB DESCRIPTION Lineman Electrician - Teledata **DISTRICT** 6

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

NOTE: Applies to all public work and covered private projects, including those receiving ConnectAll funding subject to LL 224-E,solicited prior to July 1, 2025. For all projects, excluding dial-up internet access service, solicited on or after July 1, 2025, please see BROADBAND

Per hour:	07/01/2026	01/04/2027	01/03/2028	01/01/2029
Cable Splicer	$ 42.03	$ 43.30	$ 44.59	$ 45.93
Installer, Repairman	39.89	41.09	42.32	43.59
Teledata Lineman	39.89	41.09	42.32	43.59
Tech., Equip. Operator	39.89	41.09	42.32	43.59
Groundman/Flagger	21.14	21.78	22.43	23.10

For outside work, stopping at first point of attachment (demarcation).

NOTE: EXCLUDES Teledata work within ten (10) feet of High Voltage (600 volts and over) transmission lines. For this work, please see LINEMAN.

SHIFT WORK
The following rates apply when the contracting agency mandates multiple shifts of at least five (5) days duration are worked. When two (2) or three (3) shifts are worked the following rates apply:

1ST SHIFT	REGULAR RATE
2ND SHIFT	REGULAR RATE PLUS 10%
3RD SHIFT	REGULAR RATE PLUS 15%

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 6.18 plus 4%*	$ 6.43 plus 5%*	$ 6.43 plus 6%*	$ 6.68 plus 7%*

*NOTE: The percentage (%) listed above is based on the hourly wage paid, straight time rate or premium time rate.

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE
WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE

6-1249LT - Teledata

Lineman Electrician - Traffic Signal, Lighting — 08/01/2026

JOB DESCRIPTION Lineman Electrician - Traffic Signal, Lighting **DISTRICT** 6

ENTIRE COUNTIES
Westchester

WAGES
Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors which includes, but is not limited to road loop wires; conduit and plastic or other type pipes that carry conductors, flex cables and connectors, and to oversee the encasement or burial of such conduits or pipes.

Crane Operators: Operation of any type of crane on Traffic Signal/Lighting projects.
Crawler Backhoe: Operation of tracked excavator/crawler backhoe with 1/2 yard bucket or larger on Traffic Signal/Lighting projects.
Digging Machine Operator: All other digging equipment and augering on Traffic Signal/Lighting projects.

A Groundman/Groundman Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator/equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/truck driver may assist in installing conduit, pipe, cables and equipment.

A flagger's duties shall consist of traffic control only.

Per hour:	07/01/2026	05/03/2027	05/01/2028
Group A:			
Lineman, Technician	$ 61.18	$ 63.52	$ 66.01
Crane, Crawler Backhoe	61.18	63.52	66.01
Certified Welder	64.24	66.70	69.31
Group B:			
Digging Machine	$ 55.06	$ 57.17	$ 59.41
Group C:			
Tractor Trailer Driver	$ 52.00	$ 53.99	$ 56.11
Groundman, Truck Driver	48.94	50.82	52.81
Equipment Mechanic	48.94	50.82	52.81
Group D:			

Flagger	$ 36.71	$ 38.11	$ 39.61

Above rates are applicable for installation, testing, operation, maintenance and repair on all Traffic Control (Signal) and Illumination (Lighting) projects, Traffic Monitoring Systems, and Road Weather Information Systems. Includes digging of holes for poles, anchors, footer foundations for electrical equipment; assembly of all electrical materials or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

SHIFT WORK
The following rates will apply on all contracting agency mandated multiple shifts of at least five (5) days duration worked between the hours listed below:

1ST SHIFT	8:00 AM TO 4:30 PM REGULAR RATE
2ND SHIFT	4:30 PM TO 1:00 AM REGULAR RATE PLUS 17.3%
3RD SHIFT	12:30 AM TO 9:00 AM REGULAR RATE PLUS 31.4%

SUPPLEMENTAL BENEFITS
Per hour:

	07/01/2026	05/03/2027	05/01/2028
Group A	$ 32.91*	$ 34.41*	$ 35.91*
Group B	$ 28.91*	$ 30.41*	$ 31.91*
Group C	$ 28.51*	$ 29.71*	$ 30.91*
Group D	$ 28.41*	$ 29.54*	$ 30.67*

*NOTE: Plus 7% of the hourly wage paid. The 7% is based on the straight time rate or the premium time rate.

OVERTIME PAY
See (B, E, Q, X) on OVERTIME PAGE. NOTE: Double time for emergency work designated by the Contracting Agency.
WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY
Paid: See (5, 6, 8, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 25) on HOLIDAY PAGE
NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES
WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyworker's Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

	07/01/2026	05/03/2027	05/01/2028
All terms:	$ 28.41*	$ 29.54*	$ 30.67*

*NOTE: Plus 7% of the hourly wage paid. The 7% is based on the straight time rate or the premium time rate.

6-1249aWestLT

Mason - Building — 08/01/2026

JOB DESCRIPTION Mason - Building **DISTRICT** 11

ENTIRE COUNTIES
Putnam, Rockland, Westchester

PARTIAL COUNTIES
Orange: Only the Township of Tuxedo.

WAGES
Per hour:

	07/01/2026
Bricklayer	$ 50.15
Cement Mason	50.15
Plasterer/Stone Mason	50.15
Pointer/Caulker	50.15

Additional $1.00 per hour for power saw work
Additional $0.50 per hour for swing scaffold or staging work

SHIFT WORK
SHIFT WORK: When shift work or an irregular workday is mandated or required by state, federal, county, local or other governmental agency contracts, the following premiums apply:
Irregular workday requires 15% premium
Second shift an additional 15% of wage plus benefits to be paid
Third shift an additional 25% of wage plus benefits to be paid

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 40.15

OVERTIME PAY
OVERTIME:

Cement Mason	See (B, E, Q, W) on OVERTIME PAGE.
All Others	See (B, E, E2, Q) on OVERTIME PAGE.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 16, 25) on HOLIDAY PAGE

Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

REGISTERED APPRENTICES
Wages per hour:

750 hour terms at the following percentage of Journeyworker's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour

750 hour terms at the following percentage of Journeyworker supplements

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

11-5wp-b

Mason - Building — 08/01/2026

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES
Building

Wages per hour:	07/01/2026	01/01/2027 Additional
Mosaic & Terrazzo Mechanic	$ 62.82	$ 1.06
Mosaic & Terrazzo Finisher	61.22	

SUPPLEMENTAL BENEFITS
Per hour:

Mosaic & Terrazzo Mechanic	$ 31.91* + $11.63
Mosaic & Terrazzo Finisher	$ 31.91* + 11.61

*This portion of benefits subject to same premium rate as shown for overtime wages.

OVERTIME PAY
See (A, E, Q) on OVERTIME PAGE
Deduct $7.00 from hourly wages before calculating overtime.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

Easter Sunday is an observed holiday.Holidays falling on a Saturday will be observed on that Saturday. Holidays falling on a Sunday will be celebrated on the Monday.

REGISTERED APPRENTICES

Wages Per hour:

	1st 0-1500	2nd 1501-3000	3rd 3001-3750	4th 3751-4500	5th 4501-5250	6th 5251-6000
07/01/2026	$25.90	$33.30	$40.85	$42.00	$50.56	$57.05

Supplemental Benefits per hour:

07/01/2026	$7.26* + 4.07	$9.33* + 5.23	$15.99* + 6.98	$24.31* + 8.14	$25.21* + 9.32	$28.21* + 10.46

*This portion of benefits subject to same premium rate as shown for overtime wages.

9-7/3

Mason - Building — 08/01/2026

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per hour:	07/01/2026	12/07/2026 Additional	06/07/2027 Additional
Tile Setters	$ 66.35	$ 1.28	$ 1.41

SUPPLEMENTAL BENEFITS

Per Hour:

$ 30.56*
+8.56

*This portion of benefits subject to same premium rate as shown for overtime wages.

OVERTIME PAY

See (B, *E, Q, V) on OVERTIME PAGE
Work beyond 10 hours on Saturday shall be paid at double the hourly wage rate.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage per hour:

750 hour terms at the following wage rate:

	1st 1-750	2nd 751-1500	3rd 1501-2250	4th 2251-3000	5th 3001-3750	6th 3751-4500	7th 4501-5250	8th 5251-6000	9th 6001-6750	10th 6501-7000
07/01/2026	$23.09	$28.32	$35.65	$40.86	$44.67	$48.38	$52.23	$57.45	$59.83	$66.35

Supplemental Benefits per hour:

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
07/01/2026	$13.05* + $.77	$13.05* + $.82	$16.16* + $.93	$16.16* + $.98	$17.16* +$1.45	$18.66* +$1.51	$19.66* +$1.94	$19.66* +$1.99	$19.96* +$4.59	$30.56* +$8.56

*This portion of benefits subject to same premium rate as shown for overtime wages.

9-7/52

Mason - Building — 08/01/2026

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour:	07/01/2026	01/04/2027 Additional
Building-Marble Restoration:		
Marble, Stone & Terrazzo Polisher	$ 48.72	$ 0.57

SUPPLEMENTAL BENEFITS

Per Hour:	
Journeyworker	
Building-Marble Restoration:	
Marble, Stone & Polisher	$ 32.78

OVERTIME PAY
See (B, *E, Q, V) on OVERTIME PAGE
* On Saturdays, 8th hour and successive hours paid at double hourly rate.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
WAGES per hour:

900 hour term at the following wage:

	1st 1-900	2nd 901-1800	3rd 1801-2700	4th 2701
07/01/2026	$ 34.10	$ 38.97	$ 43.84	$ 48.72
Supplemental Benefits Per Hour:				
07/01/2026	$ 31.28	$ 31.78	$ 32.29	$ 32.78

9-7/24-MP

Mason - Building — 08/01/2026

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES
Per Hour:

	07/01/2026	01/04/2027 Additional
Marble Cutters & Setters	$ 65.61	$ 0.75

SUPPLEMENTAL BENEFITS
Per Hour:

Journeyworker	$ 41.38

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wage Per Hour:

750 hour terms at the following wage

1st	2nd	3rd	4th	5th	6th	7th	8th

	0-3000	3001-3750	3751-4500	4501-5250	5251-6000	6001-6750	6751-7500	7500+
07/01/2026	$28.35	$42.51	$46.05	$49.59	$53.14	$55.76	$65.61	$65.61

Supplemental Benefits per hour:

	1st	2nd	3rd	4th	5th	6th	7th	8th
07/01/2026	$27.95	$30.68	$31.37	$32.05	$32.73	$39.34	$41.38	$41.38

9-7/4

Mason - Building — 08/01/2026

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per hour:	07/01/2026	12/07/2026 Additional	06/07/2027 Additional
Tile Finisher	$ 50.93	$ 1.05*	$ 1.15*

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS
Per Hour:
$ 27.16*
+ $8.37

* This portion of benefits is subject to same premium rate as shown for overtime wages.

OVERTIME PAY
See (A, *E, Q) on OVERTIME PAGE
*Double time rate after 10 hours on Saturdays

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

9-7/88-tf

Mason - Building — 08/01/2026

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour:	07/01/2026	01/04/2027 Additional
Marble, Stone, Maintenance Finishers:	$ 28.56	$ 0.41

Note 1: An additional $2.00 per hour for time spent grinding floor using "60 grit" and below.
Note 2: Flaming equipment operator shall be paid an additional $25.00 per day.

SUPPLEMENTAL BENEFITS
Per Hour:

Marble, Stone
Maintenance Finishers: $ 16.54

OVERTIME PAY
See (B, *E, Q, V) on OVERTIME PAGE

*Double hourly rate after 8 hours on Saturday

HOLIDAY
Paid: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE
1st term apprentice gets paid for all observed holidays.

REGISTERED APPRENTICES
WAGES per hour:

	07/01/2026
0-750	$ 23.78
751-1500	24.43
1501-2250	25.07
2251-3000	25.70
3001-3750	26.65
3751-4500	27.93
4501+	28.56

Supplemental Benefits:
Per hour:

0-750	$ 12.61
751-1500	13.12
1501-2250	13.65
2251-3000	14.18
3001-3750	14.97
3751-4500	16.01
4501+	16.54

9-7/24M-MF

Mason - Building / Heavy&Highway — 08/01/2026

JOB DESCRIPTION Mason - Building / Heavy&Highway **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES
Per hour:

	07/01/2026	01/04/2027 Additional
Marble-Finisher	$ 51.04	$ 0.53

SUPPLEMENTAL BENEFITS
Journeyworker:
Per hour

Marble- Finisher	$ 38.46

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE
Work beyond 8 hours on a Saturday shall be paid at double the rate.

HOLIDAY
Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE
When an observed holiday falls on a Sunday, it will be observed the next day.

9-7/20-MF

Mason - Heavy&Highway — 08/01/2026

JOB DESCRIPTION Mason - Heavy&Highway **DISTRICT** 11

ENTIRE COUNTIES
Putnam, Rockland, Westchester

PARTIAL COUNTIES
Orange: Only the Township of Tuxedo.

WAGES
Per hour:

	07/01/2026
Bricklayer	$ 50.65
Cement Mason	50.65
Marble/Stone Mason	50.65

Plasterer	50.65
Pointer/Caulker	50.65

Additional $1.00 per hour for power saw work
Additional $0.50 per hour for swing scaffold or staging work

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 40.15

OVERTIME PAY

Cement Mason	See (B, E, Q, W)
All Others	See (B, E, Q,)

HOLIDAY

Paid:	See (5, 6, 16, 25) on HOLIDAY PAGE
Overtime:	See (5, 6, 16, 25) on HOLIDAY PAGE

- Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.
- Supplemental Benefits are not paid for paid Holiday
- If Holiday is worked, Supplemental Benefits are paid for hours worked.
- Whenever an Employee works within three (3) calendar days before a holiday, the Employee shall be paid for the Holiday.

REGISTERED APPRENTICES
Wages per hour:

750 hour terms at the following percentage of Journeyworker's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour

750 hour terms at the following percentage of Journeyworker's supplements

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

11-5WP-H/H

Operating Engineer - Building — 08/01/2026

JOB DESCRIPTION Operating Engineer - Building **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, New York, Putnam, Queens, Richmond, Westchester

PARTIAL COUNTIES
Dutchess: that part of Dutchess County lying south of the North City Line of the City of Poughkeepsie.

WAGES
NOTE: Construction surveying
Party Chief--One who directs a survey party
Instrument Man--One who runs the instrument and assists Party Chief.
Rodman--One who holds the rod and assists the Survey Crew

Wages:(Per Hour) 07/01/2026

Building Construction:

Party Chief	$ 81.94
Instrument Man	60.49
Rodman	40.63

Steel Erection:

Party Chief	$ 84.04
Instrument Man	63.19
Rodman	43.31

Heavy Construction-NYC counties only:
(Foundation, Excavation.)

Party Chief	$ 88.97
Instrument man	66.04
Rodman	55.85

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2026
Building Construction	$ 29.45* + 7.65
Steel Erection	31.25* + 7.65
Heavy Construction	32.06* + 7.64

* This portion subject to SAME premium as wages

Non-Worked Holiday Supplemental Benefit:
$ 22.48

OVERTIME PAY
See (A, B, E, Q) on OVERTIME PAGE
Code "A" applies to Building Construction and is subject to double the rate after 7 hours on Saturdays.
Code "B" applies to Heavy Construction and Steel Erection and is subject to double the rate after 8 hours on Saturdays.

HOLIDAY
Paid: See (5, 6, 9, 11, 15, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 9, 11, 15, 16, 25) on HOLIDAY PAGE

9-15Db

Operating Engineer - Building 08/01/2026

JOB DESCRIPTION Operating Engineer - Building **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Westchester

PARTIAL COUNTIES
Dutchess: All the counties of Westchester and Putnam and the southern part of Dutchess County defined by the northern boundary line of the City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to Van Wagner Road, then north along Van Wagner Road to Bower Road, then east along Bower Road to Route 44 and along Route 44 east to Route 343, then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to the border line of the State of Connecticut and bordered on the west by the middle of the Hudson River.

WAGES
GROUP I:
Cranes (All Types up to 49 tons), Boom Trucks, Cherry Pickers (All Types), Clamshell Crane, Derrick (Stone and Steel), Dragline, Franki Pile Rig or similar, High Lift (Lull or similar) with crane attachment and winch used for hoisting or lifting, Hydraulic Cranes, Pile Drivers, Potain and similar.

Cranes (All types 50-99 tons), Drill Rig Casa Grande (CAT or similar), Franki Pile Rig or similar, Hydraulic Cranes (All types including Crawler Cranes- No specific boom length).

Cranes (All types 100 tons and over), All Tower Cranes, All Climbing Cranes irrespective of manufacturer and regardless of how the same is rigged, Franki Pile Rig or similar, Conventional Cranes (All types including Crawler Cranes-No specific boom length), Hydraulic Cranes.

GROUP I-A: Barber Green Loader-Euclid Loader, Bulldozer, Carrier-Trailer Horse, Concrete Cleaning Decontamination Machine Operator, Concrete-Portable Hoist, Conway or Similar Mucking Machines, Elevator & Cage, Excavators all types, Front End Loaders, Gradall, Shovel, Backhoe, etc.(Crawler or Truck), Heavy Equipment Robotics Operator/Mechanic, Hoist Engineer-Material, Hoist Portable Mobile Unit, Hoist(Single, Double or Triple Drum), Horizontal Directional Drill Locator, Horizontal Directional Drill Operator and Jersey Spreader, Letourneau or Tournapull(Scrapers over 20 yards Struck), Lift Slab Console, etc., Lull HiLift or Similar, Master Environmental Maintenance Mechanics, Mucking Machines Operator/Mechanic or Similar Type, Overhead Crane, Pavement Breaker(Air Ram), Paver(Concrete), Post Hole Digger, Power House Plant, Road Boring Machine, Road Mix Machine, Ross Carrier and Similar Machines, Rubber tire double end backhoes and similar machines, Scoopmobile Tractor-Shovel Over 1.5 yards, Shovel (Tunnels), Spreader (Asphalt) Telephie(Cableway), Tractor Type Demolition Equipment, Trenching Machines-Vermeer Concrete Saw Trencher and Similar, Ultra High Pressure Waterjet Cutting Tool System, Vacuum Blasting Machine operator/mechanic, Winch Truck A Frame.

GROUP I-B: Compressor (Steel Erection), Mechanic (Outside All Types), Negative Air Machine (Asbestos Removal), Push Button (Buzz Box) Elevator.

GROUP II: Compactor Self-Propelled, Concrete Pump, Crane Operator in Training (Over 100 Tons), Grader, Machines Pulling Sheep's Foot Roller, Roller (4 ton and over), Scrapers (20 yards Struck and Under), Vibratory Rollers, Welder.

GROUP III-A: Asphalt Plant, Concrete Mixing Plants, Forklift (All power sources), Joy Drill or similar, Tractor Drilling Machine, Loader (1 1/2 yards and under), Portable Asphalt Plant, Portable Batch Plant, Portable Crusher, Skid Steer (Bobcat or similar), Stone Crusher, Well Drilling Machine, Well Point System.

GROUP III-B: Compressor Over 125 cu. Feet, Conveyor Belt Machine regardless of size, Compressor Plant, Ladder Hoist, Stud Machine.

GROUP IV-A: Batch Plant, Concrete Breaker, Concrete Spreader, Curb Cutter Machine, Finishing Machine-Concrete, Fine Grading Machine, Hepa Vac Clean Air Machine, Material Hopper(sand, stone, cement), Mulching Grass Spreader, Pump Gypsum etc, Pump-Plaster-Grout-Fireproofing. Roller(Under 4 Ton),Spreading and Fine Grading Machine, Steel Cutting Machine, Siphon Pump, Tar Joint Machine, Television Cameras for Water, Sewer, Gas etc. Turbo Jet Burner or Similar Equipment, Vibrator (1 to 5).

GROUP IV-B: Compressor (all types), Heater (All Types), Fire Watchman, Lighting Unit (Portable & Generator) Pump, Pump Station(Water, Sewer, Portable, Temporary), Welding Machine (Steel Erection & Excavation).

GROUP V: Mechanics Helper, Motorized Roller (walk behind), Stock Attendant, Welder's Helper, Maintenance Engineer Crane(75 ton and over).

Group VI-A: Welder Certified
GROUP VI-B: Utility Man, Warehouse Man.

WAGES: (per hour)

	07/01/2026	03/01/2027
GROUP I		
Cranes- up to 49 tons	$ 71.19	$ 73.11
Cranes- 50 tons to 99 tons	73.69	75.69
Cranes- 100 tons and over	84.27	86.64
GROUP I-A	62.20	63.80
GROUP I-B	57.24	58.67
GROUP II	59.98	61.50
GROUP III-A	57.75	59.20
GROUP III-B	54.93	56.28
GROUP IV-A	57.16	58.58
GROUP IV-B	48.17	49.28
GROUP V	52.01	53.25
Group VI-A	61.05	62.61
GROUP VI-B		
Utility Man	49.30	50.45
Warehouse Man	51.72	52.95

An additional 20% of wage to be paid when required to wear protective equipment on hazardous/toxic waste projects.
Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional $2.00 per hour.
Engineers operating cranes with booms 149 feet or over in length will be paid an additional $3.00 per hour.
Loader operators over 5 cubic yard capacity additional .50 per hour.
Shovel operators over 4 cubic yard capacity additional $1.00 per hour.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 34.42	$ 36.17

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 25, 26, 28) on HOLIDAY PAGE

8-137B

Operating Engineer - Heavy&Highway 08/01/2026

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Westchester

PARTIAL COUNTIES
Dutchess: All the counties of Westchester and Putnam and the southern part of Dutchess County defined by the northern boundary line of the City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to Van Wagner Road, then north along Van Wagner Road to Bower Road, then east along Bower Road to Route 44 and along Route 44 east to Route 343, then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to the border line of the State of Connecticut and bordered on the west by the middle of the Hudson River.

WAGES
GROUP I: Boom Truck, Cherry Picker, Clamshell, Crane, (Crawler, Truck),
Dragline, Drill Rig (Casa Grande, Cat, or Similar), Floating Crane (Crane on Barges) under 100 tons, Gin Pole, Hoist Engineer-Concrete (Crane-Derrick-Mine Hoist), Knuckle Boom Crane, Rough Terrain Crane.

GROUP I-A: Auger (Truck or Truck Mounted), Boat Captain, Bulldozer-All Sizes, Central Mix Plant Operator, Chipper (all types), Close Circuit T.V., Combination Loader/Backhoe, Compactor with Blade, Concrete Finishing Machine, Gradall, Grader (Motor Grader), Elevator & Cage (Materials or Passenger), Excavator (and all attachments), Front End Loaders (1 1/2 yards and over), High Lift Lull and similar, Hoist (Single, Double, Triple Drum), Hoist Portable Mobile Unit, Hoist Engineer (Material), Jack and Bore Machine, Log Skidders, Mill Machines, Mucking Machines, Overhead Crane, Paver (concrete), Post Pounder (of any type), Push Cats, Road Reclaimer, Robot Hammer (Brokk or similar), Robotic Equipment (Scope of Engineer Schedule), Ross Carrier and similar, Scrapers (20 yard struck and over), Side Boom, Slip Form Machine, Spreader (Asphalt), Trenching Machines (Telephies-Vermeer Concrete Saw), Tractor Type Demolition Equipment, Vacuum Truck. Vibratory Roller(Riding) or Roller used in mainline paving operations.

GROUP I-B: Asphalt Mobile Conveyor/Transfer Machine, Road Paver (Asphalt).

GROUP II-A: Ballast Regulators, Compactor Self Propelled, Fusion Machine, Rail Anchor Machines, Roller (4 ton and over), Scrapers (20 yard struck and under).

GROUP II-B: Mechanic (Outside) All Types, Shop Mechanic.

GROUP III: Air Tractor Drill, Asphalt Plant, Batch Plant, Boiler (High Pressure), Concrete Breaker (Track or Rubber Tire), Concrete Pump, Concrete Spreader, Excavator Drill, Farm Tractor, Forklift (all types), Gas Tapping (Live), Hydroseeder, Loader (1 1/2 yards and under), Locomotive (all sizes), Machine Pulling Sheeps Foot Roller, Portable Asphalt Plant, Portable Batch Plant, Portable Crusher (Apprentice), Powerhouse Plant, Roller (under 4 ton), Sheer Excavator, Skid Steer/Bobcat, Stone Crusher, Sweeper (with seat), Well Drilling Machine.

GROUP IV: Service Person (Grease Truck), Deckhand.

GROUP IV-B: Conveyor Belt Machine (Truck Mounted), Heater (all types), Lighting Unit (Portable), Maintenance Engineer (For Crane Only), Mechanics Helper, Pump (Fireproofing), Pumps-Pump Station/Water/Sewer/Gypsum/Plaster, etc., Pump Truck (Sewer Jet or Similar), Welders Helper, Welding Machine (Steel Erection), Well Point System.

GROUP V: All Tower Cranes-All Climbing Cranes and all cranes of 100-ton capacity or greater (3900 Manitowac or similar) irrespective of manufacturer and regardless of how the same is rigged, Hoist Engineer (Steel), Engineer-Pile Driver, Jersey Spreader, Pavement Breaker/Post Hole Digger.

WAGES: Per hour:	07/01/2026	03/01/2027
Group I	$ 72.77	$ 75.10
Group I-A	63.97	65.99
Group I-B	67.49	69.64
Group II-A	61.21	63.14
Group II-B	63.17	65.17
Group III	60.12	62.01
Group IV	54.49	56.18
Group IV-B	46.59	48.01
Group V		
Engineer All Tower, Climbing and Cranes of 100 Tons	82.61	85.29
Hoist Engineer(Steel)	74.67	77.07
Engineer(Pile Driver)	79.73	82.31
Jersey Spreader, Pavement Breaker (Air Ram)Post Hole Digger	62.66	64.64

Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional $2.00 per hour over the rate listed in the Wage Schedule. Engineers operating cranes with booms 149 feet or over in length will be paid an additional $3.00 per hour over the rate listed in the Wage Schedule. Loader and Excavator Operators: over 5 cubic yards capacity $0.50 per hour over the rate listed in the Wage Schedule. Shovel Operators: over 4 cubic yards capacity $1.00 per hour over the rate listed in the Wage Schedule.

SHIFT WORK

A 15% premium on all hours paid, including overtime hours for 2nd and 3rd shifts on all government mandated off-shift work

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker:	$ 38.08 up to 40 Hours	$ 39.68 up to 40 hours
	After 40 hours $ 27.63* PLUS $ 1.45 on all hours worked	After 40 hours $ 28.68* PLUS $ 1.50 on all hours worked

*This amount is subject to premium

OVERTIME PAY
See (B, E, P, *R, **U) on OVERTIME PAGE
* For Holiday codes 8,15,25,26 code R applies
** For Holiday codes 5 & 6 code U applies

HOLIDAY
Paid: See (5, 6, 8, 15, 25, 26, 28) on HOLIDAY PAGE
Overtime See (5, 6, 8, 15, 25, 26) on OVERTIME PAGE

* For Holiday codes 8,15,25,26 code R applies
** For Holiday codes 5 & 6 code U applies

Note: If employees are required to work on Easter Sunday they shall be paid at the rate of triple time.

REGISTERED APPRENTICES
(1)year terms at the following rate.

1st term	$ 38.38	$ 39.59
2nd term	44.78	46.19
3rd term	51.18	52.79
4th term	57.57	59.39

Supplemental Benefits per hour:

	$ 29.08	$ 30.18

8-137HH

Operating Engineer - Heavy&Highway — 08/01/2026

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 9

ENTIRE COUNTIES
Putnam, Westchester

PARTIAL COUNTIES
Dutchess: South of the North city line of Poughkeepsie

WAGES
Party Chief - One who directs a survey party
Instrument Man - One who runs the instrument and assists Party Chief
Rodman - One who holds the rod and in general, assists the Survey Crew
Categories cover GPS & Underground Surveying

Per Hour:	07/01/2026
Party Chief	$ 85.77
Instrument Man	63.48
Rodman	53.53

SUPPLEMENTAL BENEFITS
Per Hour: 07/01/2026

All Categories
Straight Time: $ 32.06* + $7.64

Premium:
Time & 1/2 $ 48.09* + $7.64

Double Time $ 64.12* + $7.64

*This portion is subject to the SAME premium as wages.

Non-Worked Holiday Supplemental Benefits:
$ 22.47

OVERTIME PAY
See (B, *E, Q) on OVERTIME PAGE
* Doubletime paid on all hours in excess of 8 hours on Saturday

HOLIDAY
Paid: See (5, 6, 7, 11, 12) on HOLIDAY PAGE
Overtime: See (5, 6, 7, 11, 12) on HOLIDAY PAGE

Operating Engineer - Heavy&Highway - Tunnel 08/01/2026

JOB DESCRIPTION Operating Engineer - Heavy&Highway - Tunnel **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Westchester

PARTIAL COUNTIES
Dutchess: All the counties of Westchester and Putnam and the southern part of Dutchess County defined by the northern boundary line of the City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to Van Wagner Road, then north along Van Wagner Road to Bower Road, then east along Bower Road to Route 44 and along Route 44 east to Route 343, then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to the border line of the State of Connecticut and bordered on the west by the middle of the Hudson River.

WAGES
GROUP I: Boom Truck, Cherry Picker, Clamshell, Crane(Crawler, Truck), Dragline, Drill Rig Casa Grande(Cat or Similar), Floating Crane(Crane on Barge-Under 100 Tons), Hoist Engineer(Concrete/Crane-Derrick-Mine Hoist), Knuckle Boom Crane, Rough Terrain Crane.

GROUP I-A: Auger(Truck or Truck Mounted), Boat Captain, Bull Dozer-all sizes, Central Mix Plant Operator, Chipper-all types, Close Circuit T.V., Combination Loader/Backhoe, Compactor with Blade, Concrete Finishing Machine, Gradall, Grader(Motor Grader), Elevator & Cage(Materials or Passengers), Excavator(and all attachments), Front End Loaders(1 1/2 yards and over), High Lift Lull, Hoist(Single, Double, Triple Drum), Hoist Portable Mobile Unit, Hoist Engineer(Material), Jack and Bore Machine, Log Skidder, Milling Machine, Moveable Concrete Barrier Transfer & Transport Vehicle, Mucking Machines. Overhead Crane, Paver(Concrete), Post Pounder of any type, Push Cats, Road Reclaimer, Robot Hammer(Brokk or similar), Robotic Equipment(Scope of Engineer Schedule), Ross Carrier and similar machines, Scrapers(20 yards struck and over), Side Boom, Slip Form Machine, Spreader(Asphalt), Trenching Machines, Telephies-Vermeer Concrete Saw, Tractor type demolition equipment, Vacuum Truck, Vibratory Roller (Riding) used in mainline paving operations.

GROUP I-B: Asphalt Mobile Conveyor/Transfer Machine, Road Paver(Asphalt).

GROUP II-A: Ballast Regulators, Compactor(Self-propelled), Fusion Machine, Rail Anchor Machines, Roller(4 ton and over), Scrapers(20 yard struck and under).

GROUP II-B: Mechanic(outside)all types, Shop Mechanic.

GROUP III: Air Tractor Drill, Asphalt Plant, Batch Plant, Boiler(High Pressure), Concrete Breaker(Track or Rubber Tire), Concrete Pump, Concrete Spreader, Excavator Drill, Farm Tractor, Forklift(all types of power), Gas Tapping(Live), Hydroseeder, Loader(1 1/2 yards and under), Locomotive(all sizes), Machine Pulling Sheeps Foot Roller, Portable Asphalt Plant, Portable Batch Plant, Portable Crusher(Apprentice), Powerhouse Plant, Roller(under 4 ton), Sheer Excavator, Skidsteer/Bobcat, Stone Crusher, Sweeper(with seat), Well Drilling Machine.

GROUP IV-A: Service Person(Grease Truck), Deckhand.

GROUP IV-B: Conveyor Belt Machine(Truck Mounted), Heater(all types), Lighting Unit(Portable), Maintenance Engineer(for Crane only), Mechanics Helper, Pump(Fireproofing), Pumps-Pump Station/Water/Sewer/Gypsum/Plaster, etc., Pump Truck(Sewer Jet or similar), Welding Machine(Steel Erection), Welders Helper.

GROUP V-A: Engineer(all Tower Cranes, all Climbing Cranes & all Cranes of 100 ton capacity or greater),Hoist Engineer(Steel-Sub Structure), Engineer-Pile Driver, Jersey-Spreader, Pavement breaker, Post Hole Digger

WAGES: (per hour)

	07/01/2026	03/01/2027
GROUP I	$ 72.77	$ 75.10
GROUP I-A	63.97	65.99
GROUP I-B	67.49	69.64
GROUP II-A	61.21	63.14
GROUP II-B	63.17	65.17
GROUP III	60.12	62.01
GROUP IV-A	54.49	56.18
GROUP IV-B	46.59	48.01

GROUP V-A		
Engineer-Cranes	82.61	85.29
Engineer-Pile Driver	79.73	82.31
Hoist Engineer	74.67	77.07
Jersey Spreader/Post Hole Digger	62.66	64.64

An additional 20% of wage to be paid when required to wear protective equipment on hazardous/toxic waste projects.
Operators required to use two buckets pouring concrete on other than road pavement shall receive $0.50 per hour over scale.
Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional $2.00 per hour.
Engineers operating cranes with booms 149 feet or over in length will be paid an additional $3.00 per hour.
Operators of shovels with a capacity over (4) cubic yards shall be paid an additional $1.00 per hour.
Operators of loaders with a capacity over (5) cubic yards shall be paid an additional $0.50 per hour.

SHIFT WORK
A 15% premium on all hours paid, including overtime hours for 2nd and 3rd shifts
on all government mandated off-shift work

SUPPLEMENTAL BENEFITS
Per hour:
Journeyworker:

$ 38.08 up to 40 hours	$ 39.68 up to 40 hours
After 40 hours: $27.63 plus $1.45 on all hours worked	After 40 hours: $28.68 plus $1.50 on all hours worked

OVERTIME PAY
See (E, P, *R, **T, ***U) on OVERTIME PAGE
*For Holiday codes 8, 15, 25, 26, code R applies.
**For Holiday code 28, code T applies.
***For Holiday codes 5 & 6, code U applies.

HOLIDAY
Paid: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE
For Holiday codes 5 & 6, code U applies.
For Holiday codes 8, 15, 25, 26, code R applies.
If employees are required to work on Easter Sunday, they shall be paid at the rate of triple time.

REGISTERED APPRENTICES
(1)year terms at the following rates:

1st term	$ 38.38	$ 39.59
2nd term	44.78	46.19
3rd term	51.18	52.79
4th term	57.57	59.39
Supplemental Benefits per hour:		
All terms	$ 29.08	$ 30.18

8-137Tun

Operating Engineer - Marine Dredging — 08/01/2026

JOB DESCRIPTION Operating Engineer - Marine Dredging **DISTRICT** 4

ENTIRE COUNTIES
Albany, Bronx, Cayuga, Clinton, Columbia, Dutchess, Essex, Franklin, Greene, Jefferson, Kings, Monroe, Nassau, New York, Orange, Oswego, Putnam, Queens, Rensselaer, Richmond, Rockland, St. Lawrence, Suffolk, Ulster, Washington, Wayne, Westchester

WAGES
These wage rates do not apply to Operating Engineers on land-based construction projects. For those projects, refer to the Operating Engineers Heavy/Highway rates. The wage rates listed below apply specifically to all equipment and operators involved in marine dredging work within navigable waters located in the counties listed above.

Per Hour:	07/01/2026	10/01/2026

CLASS A1 Deck Captain, Leverman, Mechanical Dredge Operator, Licensed Tug Operator with MOTV	$ 48.48	$ 49.94
CLASS A2 Crane Operator (360 swing)	43.20	44.50
CLASS B Dozer, Front Loader Operator (On Land)	To conform to Operating Engineer Prevailing Wage in locality where work is being performed including benefits.	
CLASS B1 Derrick Operator (180 swing), Spider/Spill Barge Operator I/II, Fill Placer, Engineer, Chief Mate, Electrician,Chief Welder,Maintenance Engineer, Licensed Boat, Crew Boat Operator	41.93	43.18
CLASS B2 Certified Welder	39.46	40.65
CLASS C1 Drag Barge Operator, Steward, Mate, Assistant Fill Placer	38.38	39.53
CLASS C2 Boat Operator	37.15	38.26
CLASS D Shoreman, Deckhand, Oiler, Rodman, Scowman, Cook, Messman, Porter/Janitor	30.86	31.79

SUPPLEMENTAL BENEFITS
Per Hour:
THE FOLLOWING SUPPLEMENTAL BENEFITS APPLY TO ALL CATEGORIES

All Classes:	7% of Hourly Straight time wage + $12.00.	7.5% of Hourly Straight time wage + $12.00.

- Additional $0.63 per hour for Overtime hours

OVERTIME PAY
See (B2, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 26) on HOLIDAY PAGE

4-25a-MarDredge

Operating Engineer - Survey Crew - Consulting Engineer — 08/01/2026

JOB DESCRIPTION Operating Engineer - Survey Crew - Consulting Engineer **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, Westchester

PARTIAL COUNTIES
Dutchess: That part in Duchess County lying South of the North City line of Poughkeepsie.

WAGES
Feasibility and preliminary design surveying, any line and grade surveying for inspection or supervision of construction.

Per hour: Survey Classifications	07/01/2026
Party Chief	$ 51.16
Instrument Man	42.44
Rodman	36.92

SUPPLEMENTAL BENEFITS
Per Hour:

All Crew Members: $ 24.53

OVERTIME PAY
OVERTIME:.... See (B, E*, Q, V) ON OVERTIME PAGE.
*Double-time paid on the 9th hour on Saturday.

HOLIDAY
Paid: See (5, 6, 7, 11, 16) on HOLIDAY PAGE
Overtime: See (5, 6, 7, 11, 16) on HOLIDAY PAGE

9-15dconsult

Painter — 08/01/2026

JOB DESCRIPTION Painter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour:	07/01/2026	05/01/2027 Additional
Brush	$ 55.76	$2.77*
Abatement/Removal of lead based or lead containing paint on materials to be repainted.	55.76	
Spray & Scaffold	$ 58.76	
Fire Escape	58.76	
Decorator	58.76	
Paperhanger/Wall Coverer	57.27	

*To be allocated at a later date.

SHIFT WORK
Agency/Government mandated off-shift work to be paid at time and one-half the hourly wage.

SUPPLEMENTAL BENEFITS
Per hour:

Paperhanger	$ 39.86
All others	36.72
Paperhanger Premium	45.26
Premium	41.23**

**Applies only to "All others" category, not paperhanger journeyworker.

OVERTIME PAY
See (A, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
One (1) year terms at the following wage rate.

Per hour:	07/01/2026
Appr 1st term...	$ 21.18
Appr 2nd term...	27.40
Appr 3rd term...	33.30
Appr 4th term...	44.67

Supplemental benefits:
Per Hour:

Appr 1st term...	$ 18.06
Appr 2nd term...	22.14
Appr 3rd term...	25.59

Appr 4th term... 32.55

8-NYDC9-B/S

Painter 08/01/2026

JOB DESCRIPTION Painter **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Suffolk, Westchester

PARTIAL COUNTIES
Nassau: All of Nassau except the areas described below: Atlantic Beach, Ceaderhurst, East Rockaway, Gibson, Hewlett, Hewlett Bay, Hewlett Neck, Hewlett Park, Inwood, Lawrence, Lido Beach, Long Beach, parts of Lynbrook, parts of Oceanside, parts of Valley Stream, and Woodmere. Starting on the South side of Sunrise Hwy in Valley Stream running east to Windsor and Rockaway Ave., Rockville Centre is the boundary line up to Lawson Blvd. turn right going west all the above territory. Starting at Union Turnpike and Lakeville Rd. going north to Northern Blvd. the west side of Lakeville road to Northern blvd. At Northern blvd. going east the district north of Northern blvd. to Port Washington Blvd. West of Port Washington blvd.to St.Francis Hospital then north of first traffic light to Port Washington and Sands Point, Manor HAven, Harbour Acres.

WAGES

Per hour:	07/01/2026	05/01/2027
		Additional
Drywall Taper:	$ 55.76	$ 2.77*
Scaffold:	$ 58.76	

* To be allocated a later date.

SHIFT WORK
Agency/Government mandated off-shift work to be paid at time and one-half hourly wage

SUPPLEMENTAL BENEFITS
Per hour:
Journeyworker $ 36.72

OVERTIME PAY
See (A, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages - Per Hour:

1500 hour terms at the following wage rate:

1st term	$ 21.18
2nd term	27.40
3rd term	33.30
4th term	44.67

Supplemental Benefits - Per hour:
One year term (1500 hours) at the following dollar amount.

1st year	$ 18.06
2nd year	22.14
3rd year	25.59
4th year	32.55

8-NYDCT9-DWT

Painter - Bridge & Structural Steel 08/01/2026

JOB DESCRIPTION Painter - Bridge & Structural Steel **DISTRICT** 8

ENTIRE COUNTIES
Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES
Per Hour:
STEEL:

Bridge Painting:	07/01/2026	10/01/2026
	$ 57.00*	Additional
	+ 12.90**	+ 3.64***

ADDITIONAL $7.00 per hour for POWER TOOL/SPRAY, whether straight time or overtime.

*NOTE: All premium wages are to be calculated on base rate per hour only.

** For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (50 hour cap).

*** To be allocated a later date

NOTE: Generally, for Bridge Painting Contracts, ALL WORKERS on and off the bridge (including Flagmen) are to be paid Painter's Rate; the contract must be ONLY for Bridge Painting.

SHIFT WORK

When directly specified in public agency or authority contract documents for an employer to work a second shift and works the second shift with employees other than from the first shift, all employees who work the second shift will be paid 10% of the base wage shift differential in lieu of overtime for the first eight (8) hours worked after which the employees shall be paid at time and one half of the regular wage rate. When a single irregular work shift is mandated in the job specifications or by the contracting agency, wages shall be paid at time and one half for single shifts between the hours of 3pm-11pm or 11pm-7am.

SUPPLEMENTAL BENEFITS

Per Hour:
Journeyworker:

$ 13.49
+ 31.67*

OVERTIME PAY

See (B, F, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (4, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage - Per hour:
Apprentices: (1) year terms.

	07/01/2026
1st year	$ 22.80* + 5.64**
2nd year	$ 34.20* + 7.74**
3rd year	$ 45.60* + 10.31**

*NOTE: All premium wages are to be calculated on base rate per hour only.

** For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (50 hour cap).

Supplemental Benefits - Per hour:

1st year	$ 13.74
2nd year	$ 8.09* + 18.99
3rd year	$ 10.79* + 25.34

*Portion not applicable to May 1st to November 15th and Nov 16th to April 30th period mentioned above.

8-DC-9/806/155-BrSS

Painter - Line Striping **08/01/2026**

JOB DESCRIPTION Painter - Line Striping **DISTRICT** 8

ENTIRE COUNTIES
Albany, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Nassau, Orange, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES
Per hour:

Painter (Striping-Highway):	07/01/2026	04/01/2027
Striping-Machine Operator*	$ 36.93	$ 38.45
Linerman Thermoplastic	44.44	46.22

Note: * Includes but is not limited to: Positioning of cones and directing of traffic using hand held devices. Excludes the Driver/Operator of equipment used in the maintenance and protection of traffic safety.

SHIFT WORK
When directly specified in public agency or authority contract documents there shall be a 30% night shift premium pay differential for all work performed after 9:00pm and before 5:00am.

SUPPLEMENTAL BENEFITS
Per hour paid:
Journeyworker:

Striping Machine Operator:	$ 24.95	$ 25.60
Linerman Thermoplastic:	24.95	25.60

OVERTIME PAY
See (B, B2, E2, F, S) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 20) on HOLIDAY PAGE
Overtime: See (5, 20) on HOLIDAY PAGE

REGISTERED APPRENTICES
One (1) year terms at the following wage rates:

	07/01/2026
1st Term:	$ 21.18
2nd Term:	27.40
3rd Term:	33.30

Supplemental Benefits per hour:

1st term:	$ 18.06
2nd term:	22.14
3rd term:	25.59

8-1456-LS

Painter - Metal Polisher 08/01/2026

JOB DESCRIPTION Painter - Metal Polisher **DISTRICT** 8

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

	07/01/2026
Metal Polisher	$ 41.33
Metal Polisher*	42.43
Metal Polisher**	45.33

*Note: Applies on New Construction & complete renovation
** Note: Applies when working on scaffolds over 34 feet.

SUPPLEMENTAL BENEFITS
Per Hour:

Journeyworker:
All classifications $ 13.99

OVERTIME PAY
See (B, E, P, T) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:
One (1) year term at the following wage rates:

	07/01/2026
1st year	$ 20.67
2nd year	22.73
3rd year	24.80
1st year*	$ 21.06
2nd year*	23.17
3rd year*	25.34
1st year**	$ 23.17
2nd year**	25.23
3rd year**	27.30

*Note: Applies on New Construction & complete renovation
** Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:
Per hour:

1st year	$ 9.19
2nd year	9.19
3rd year	9.19

8-8A/28A-MP

Plumber — 08/01/2026

JOB DESCRIPTION Plumber **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Westchester

WAGES
Per hour:

	07/01/2026
Plumber and Steamfitter	$ 66.83

SHIFT WORK

SHIFT WORK:
When directly specified in public agency or authority contract documents, shift work outside the regular hours of work shall be comprised of eight (8) hours per shift not including Saturday, Sundays and holidays. One half (1/2) hour shall be allowed for lunch after the first four (4) hours of each shift. Wage and Fringes for shift work shall be straight time plus a shift premium of twenty-five (25%) percent. A minimum of five days Monday through Friday must be worked to establish shift work.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker $ 46.79

OVERTIME PAY
See (B, E, E2, Q, V) on OVERTIME PAGE
OVERTIME:... See on OVERTIME PAGE.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1)year terms at the following wages:

1st Term	$ 24.95
2nd Term	28.59
3rd Term	33.07
4th Term	47.01
5th Term	50.42

Supplemental Benefits per hour:

1st term	$ 19.16
2nd term	21.42
3rd term	25.44
4th term	33.77
5th term	35.82

8-21.1-ST

Plumber - HVAC / Service — 08/01/2026

JOB DESCRIPTION Plumber - HVAC / Service **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Putnam, Westchester

PARTIAL COUNTIES
Delaware: Only the townships of Middletown and Roxbury
Ulster: Entire County(including Wallkill and Shawangunk Prisons) except for remainder of Town of Shawangunk and Towns of Plattekill, Marlboro, and Wawarsing.

WAGES
Per hour: 07/01/2026

HVAC Service	$ 45.43
	+ $ 4.52*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker HVAC Service
$ 33.34

OVERTIME PAY
See (B, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
HVAC SERVICE
(1)year terms at the following wages:

1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.
$ 20.56	$ 24.42	$ 30.35	$ 37.33	$ 40.63
+$2.45*	+$2.79*	+$3.34*	+$4.00*	+$4.26*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits per hour:

Apprentices 07/01/2026

1st term	$ 22.81
2nd term	24.68
3rd term	26.69
4th term	29.49
5th term	31.46

8-21.1&2-SF/Re/AC

Plumber - Jobbing & Alterations — 08/01/2026

JOB DESCRIPTION Plumber - Jobbing & Alterations **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Putnam, Westchester

PARTIAL COUNTIES
Ulster: Entire county (including Wallkill and Shawangunk Prisons in Town of Shawangunk) EXCEPT for remainder of Town of Shawangunk, and Towns of Plattekill, Marlboro, and Wawarsing.

WAGES

Per hour:	07/01/2026
Journeyworker:	$ 52.14

Repairs, replacements and alteration work is any repair or replacement of a present plumbing system that does not change existing roughing or water supply lines.

SHIFT WORK
When directly specified in public agency or authority contract documents, shift work outside the regular hours of work shall be comprised of eight (8) hours per shift not including Saturday, Sundays and holidays. One half (1/2) hour shall be allowed for lunch after the first four (4) hours of each shift. Wage and Fringes for shift work shall be straight time plus a shift premium of twenty-five (25%) percent. A minimum of five days Monday through Friday must be worked to establish shift work.

SUPPLEMENTAL BENEFITS

Per hour:	
Journeyworker	$ 38.99

OVERTIME PAY
See (B, *E, E2, Q, V) on OVERTIME PAGE
*When used as a make-up day, hours after 8 on Saturday shall be paid at time and one half.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 8, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1) year terms at the following wages:

1st year	$ 22.32
2nd year	24.83
3rd year	27.16
4th year	38.07
5th year	40.25

Supplemental Benefits per hour:

1st year	$ 13.07
2nd year	15.31
3rd year	19.67
4th year	26.65
5th year	28.88

8-21.3-J&A

Roofer 08/01/2026

JOB DESCRIPTION Roofer **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Dutchess, Kings, New York, Orange, Putnam, Queens, Richmond, Rockland, Sullivan, Ulster, Westchester

WAGES

Per Hour:	07/01/2026	05/01/2027 Additional
Roofer/Waterproofer	$ 52.50 + $7.00*	+ $ 3.00

* This portion is not subjected to overtime premiums.

Note: Abatement/Removal of Asbestos containing roofs and roofing material is classified as Roofer.

SUPPLEMENTAL BENEFITS
Per Hour: $ 33.12

OVERTIME PAY
See (B, H) on OVERTIME PAGE

Note: An observed holiday that falls on a Sunday will be observed the following Monday.

HOLIDAY
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1) year term apprentices indentured prior to 01/01/2023

1st	2nd	3rd	4th
$ 18.38	$ 26.25	$ 31.50	$ 39.38
	+ 3.50*	+ 4.20*	+ 5.26*

Supplemental Benefits:

1st	2nd	3rd	4th
$ 4.32	$ 16.94	$ 20.17	$ 25.03

* This portion is not subjected to overtime premiums.

(1) year term apprentices indentured after 01/01/2023

1st	2nd	3rd	4th	5th
$ 19.95	$ 23.63	$ 26.25	$ 31.50	$ 39.38
	+ 3.16*	+ 3.50*	+ 4.20*	+ 5.26*

Supplemental Benefits:

1st	2nd	3rd	4th	5th
$ 8.15	$ 15.32	$ 16.94	$ 20.17	$ 25.03

* This portion is not subjected to overtime premiums.

9-8R

Sheetmetal Worker — 08/01/2026

JOB DESCRIPTION Sheetmetal Worker **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

WAGES

	07/01/2026
SheetMetal Worker	$ 53.48
	+ 3.81*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SHIFT WORK
For all NYS D.O.T. and other Governmental mandated off-shift work:
12% increase for additional shifts for a minimum of five (5) days

SUPPLEMENTAL BENEFITS
Journeyworker $ 48.71

OVERTIME PAY
See (B, E, Q,) on OVERTIME PAGE.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 16, 23) on HOLIDAY PAGE
Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

REGISTERED APPRENTICES

1st	2nd	3rd	4th	5th	6th	7th	8th
$ 21.80	$ 22.61	$ 25.12	$ 27.61	$ 30.13	$ 32.67	$ 35.65	$ 38.61
+ 1.52*	+ 1.71*	+ 1.91*	+ 2.10*	+ 2.29*	+ 2.48*	+ 2.67*	+ 2.86*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits per hour:

Apprentices	
1st term	$ 19.09
2nd term	23.39
3rd term	25.99
4th term	28.59
5th term	31.18
6th term	33.76

7th term	35.89
8th term	38.04

8-38

Sheetmetal Worker — 08/01/2026

JOB DESCRIPTION Sheetmetal Worker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES
Per Hour:

	07/01/2026	08/01/2026
Sign Erector	$ 62.00	$ 64.00

NOTE: For Structurally Supported Overhead Highway Signs (See STRUCTURAL IRON WORKER CLASSIFICATION)

SUPPLEMENTAL BENEFITS
Per Hour:

Sign Erector	$ 59.58	$ 60.62

OVERTIME PAY
See (B, F, S) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 10, 11, 12, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 10, 11, 12, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Per Hour:
6 month Terms at the following percentage of Sign Erectors wage rate:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
35%	40%	45%	50%	55%	60%	65%	70%	75%	80%

SUPPLEMENTAL BENEFITS Per Hour:

07/01/2026

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
$ 19.04	$ 21.62	$ 24.21	$ 26.79	$36.17	$ 39.36	$ 43.50	$ 46.77	$ 50.05	$ 53.32

08/01/2026

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
$ 19.45	$ 22.09	$ 24.72	$ 27.36	$36.81	$ 40.07	$ 44.29	$ 47.62	$ 50.95	$ 54.29

4-137-SE

Sprinkler Fitter — 08/01/2026

JOB DESCRIPTION Sprinkler Fitter **DISTRICT** 1

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

WAGES
Per hour

	07/01/2026	01/01/2027	04/01/2027	01/01/2028
Sprinkler Fitter	$ 60.78	$ 60.78	$ 64.37	$ 64.37

SUPPLEMENTAL BENEFITS
Per hour

Journeyworker	$ 32.66	$ 33.66	$ 33.66	$ 34.66

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

Note: When a holiday falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double time rate. When a holiday falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double time rate.

REGISTERED APPRENTICES

One Half Year terms at the following wage per hour:

	07/01/2026	01/01/2027	04/01/2027	01/01/2028
1st Term	$ 30.87	$ 30.87	$ 32.42	$ 32.42
2nd Term	34.46	34.46	36.19	36.19
3rd Term	37.34	37.34	39.20	39.20
4th Term	40.21	40.21	42.22	42.22
5th Term	42.36	42.36	44.48	44.48
6th Term	45.95	45.95	48.25	48.25
7th Term	48.82	48.82	51.27	51.27
8th Term	51.70	51.70	54.28	54.28
9th Term	54.57	54.57	57.30	57.30
10th Term	57.44	57.44	60.31	60.31
Supplemental Benefits per hour:				
1st & 2nd Term	$ 10.23	$ 11.23	$ 11.23	$ 12.23
3rd & 4th Term	22.79	23.79	23.79	24.79
All Other Terms	23.04	24.04	24.04	25.04

1-669.2

Teamster - Building / Heavy&Highway — 08/01/2026

JOB DESCRIPTION Teamster - Building / Heavy&Highway **DISTRICT** 8

ENTIRE COUNTIES

Putnam, Westchester

WAGES

GROUP A: Straight Trucks (6-wheeler and 10-wheeler), A-frame, Winch, Dynamite Seeding, Mulching, Agitator, Water, Attenuator, Light Towers, Cement (all types), Suburban, Station Wagons, Cars, Pick Ups, any vehicle carrying materials of any kind.
GROUP AA: Tack Coat
GROUP B: Tractor & Trailers (all types).
GROUP BB: Tri-Axle,14 Wheeler
GROUP C: Low Boy (carrying equipment).
GROUP D: Fuel Trucks, Tire Trucks.
GROUP DD: Tow Truck/Flatbed Single axle.
GROUP E: Off-road Equipment (over 40 tons): Athey Wagons, Belly Dumps, Articulated Dumps, Trailer Wagons.
GROUP F: Off-road Equipment (over 40 tons) Euclid, DJB.
GROUP G: Off-road Equipment (under 40 tons) Athey Wagons, Belly Articulated Dumps, Trailer Wagons, Tracker/Crawler Dump Truck.
GROUP H: Off-road Equipment(under 40 tons), Euclid.
GROUP HH: Off-road Equipment(under 40 tons) D.J.B.
GROUP I: Off-road Equipment(under 40 tons) Darts.
GROUP II: Off-road Equipment(under 40 tons) RXS.

WAGES:(per hour)

	07/01/2026
GROUP A	$ 49.61*
GROUP AA	52.61*
GROUP B	50.23*
GROUP BB	49.73*
GROUP C	52.36*
GROUP D	50.06*
GROUP DD	38.74*
GROUP E	50.61*
GROUP F	51.61*
GROUP G	50.36*
GROUP H	50.98*
GROUP HH	51.36*
GROUP I	51.11*
GROUP II	51.48*

* To calculate premium wage, subtract $ .10 from the hourly wage.

Note: Fuel truck operators on construction sites addit. $5.00 per day.

For work on hazardous/toxic waste site addit. 20% of hourly rate.

Note: For aggregate and asphalt delivery, the applicable prevailing rate is based on the type of vehicle operated.

SHIFT WORK
When mandated by the contracting agency, DOT, or any governmental agency contracts shall receive a shift differential of fifteen (15%) above the wage rate for all work performed during the irregular shift.

SUPPLEMENTAL BENEFITS
Per hour:
Journeyworker

First 40 hours	$ 40.83
Over 40 hours	31.64

OVERTIME PAY
See (B, E, P, *R, **T) on OVERTIME PAGE
*For code (8,15,25,26) code R applies
**For code (5,6) code T applies

HOLIDAY
Paid: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE

8-456

Welder 08/01/2026

JOB DESCRIPTION Welder **DISTRICT** 1

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES
Per hour 07/01/2026

Welder: To be paid the same rate of the mechanic performing the work.*

*EXCEPTION: If a specific welder certification is required, then the 'Certified Welder' rate in that trade tag will be paid.

OVERTIME PAY

HOLIDAY

1-As Per Trade

Overtime Codes

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule. Additional requirements may also be listed in the HOLIDAY section.

NOTE: Supplemental Benefits are 'Per hour worked' (for each hour worked) unless otherwise noted

(AA)	Time and one half of the hourly rate after 7 and one half hours per day
(A)	Time and one half of the hourly rate after 7 hours per day
(B)	Time and one half of the hourly rate after 8 hours per day
(B1)	Time and one half of the hourly rate for the 9th & 10th hours week days and the 1st 8 hours on Saturday. Double the hourly rate for all additional hours
(B2)	Time and one half of the hourly rate after 40 hours per week
(B3)	Time and one half of the hourly rate after 40 straight hours per week
(C)	Double the hourly rate after 7 hours per day
(C1)	Double the hourly rate after 7 and one half hours per day
(D)	Double the hourly rate after 8 hours per day
(D1)	Double the hourly rate after 9 hours per day
(E)	Time and one half of the hourly rate on Saturday
(E1)	Time and one half 1st 4 hours on Saturday; Double the hourly rate all additional Saturday hours
(E2)	Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(E3)	Between November 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week
(E4)	Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(E5)	Double time after 8 hours on Saturdays
(F)	Time and one half of the hourly rate on Saturday and Sunday
(G)	Time and one half of the hourly rate on Saturday and Holidays
(H)	Time and one half of the hourly rate on Saturday, Sunday, and Holidays
(I)	Time and one half of the hourly rate on Sunday
(J)	Time and one half of the hourly rate on Sunday and Holidays
(K)	Time and one half of the hourly rate on Holidays
(L)	Double the hourly rate on Saturday
(M)	Double the hourly rate on Saturday and Sunday
(N)	Double the hourly rate on Saturday and Holidays
(O)	Double the hourly rate on Saturday, Sunday, and Holidays
(P)	Double the hourly rate on Sunday
(Q)	Double the hourly rate on Sunday and Holidays
(R)	Double the hourly rate on Holidays

(S)	Two and one half times the hourly rate for Holidays
(S1)	Two and one half times the hourly rate the first 8 hours on Sunday or Holidays One and one half times the hourly rate all additional hours.
(T)	Triple the hourly rate for Holidays
(U)	Four times the hourly rate for Holidays
(V)	Including benefits at SAME PREMIUM as shown for overtime
(W)	Time and one half for benefits on all overtime hours.
(X)	Benefits payable on Paid Holiday at straight time. If worked, additional benefit amount will be required for worked hours. (Refer to other codes listed.)

Holiday Codes

PAID Holidays:

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

OVERTIME Holiday Pay:

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays. The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule. The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

(1)	None
(2)	Labor Day
(3)	Memorial Day and Labor Day
(4)	Memorial Day and July 4th
(5)	Memorial Day, July 4th, and Labor Day
(6)	New Year's, Thanksgiving, and Christmas
(7)	Lincoln's Birthday, Washington's Birthday, and Veterans Day
(8)	Good Friday
(9)	Lincoln's Birthday
(10)	Washington's Birthday
(11)	Columbus Day
(12)	Election Day
(13)	Presidential Election Day
(14)	1/2 Day on Presidential Election Day
(15)	Veterans Day
(16)	Day after Thanksgiving
(17)	July 4th
(18)	1/2 Day before Christmas
(19)	1/2 Day before New Years
(20)	Thanksgiving
(21)	New Year's Day
(22)	Christmas
(23)	Day before Christmas
(24)	Day before New Year's
(25)	Presidents' Day
(26)	Martin Luther King, Jr. Day
(27)	Memorial Day
(28)	Easter Sunday

(29) Juneteenth

New York State Department of Labor - Bureau of Public Work
State Office Building Campus
Building 12 - Room 130
Albany, New York 12226

REQUEST FOR WAGE AND SUPPLEMENT INFORMATION

As Required by Articles 8 and 9 of the NYS Labor Law

Fax (518) 485-1870 or mail this form for new schedules or for determination for additional occupations.

This Form Must Be Typed

Submitted By: (Check Only One) ☐ Contracting Agency ☐ Architect or Engineering Firm ☐ Public Work District Office Date:

A. Public Work Contract to be let by: (Enter Data Pertaining to Contracting/Public Agency)

1. Name and complete address ☐ (Check if new or change)

Telephone Fax

E-Mail:

2. NY State Units (see Item 5).

- ☐ 01 DOT
- ☐ 02 OGS
- ☐ 03 Dormitory Authority
- ☐ 04 State University Construction Fund
- ☐ 05 Mental Hygiene Facilities Corp.
- ☐ 06 OTHER N.Y. STATE UNIT
- ☐ 07 City
- ☐ 08 Local School District
- ☐ 09 Special Local District, i.e., Fire, Sewer, Water District
- ☐ 1O Village
- ☐ 11 Town
- ☐ 12 County
- ☐ 13 Other Non-N.Y. State (Describe)

3. SEND REPLY TO ☐ (check if new or change)
Name and complete address:

Telephone Fax

E-Mail:

4. SERVICE REQUIRED. Check appropriate box and provide project information.

☐ New Schedule of Wages and Supplements.

APPROXIMATE BID DATE :

☐ Additional Occupation and/or Redetermination

PRC NUMBER ISSUED PREVIOUSLY FOR THIS PROJECT :

OFFICE USE ONLY

B. PROJECT PARTICULARS

5. Project Title _____

Description of Work _____

Contract Identification Number _____

Note: For NYS units, the OSC Contract No. _____

6. Location of Project:
Location on Site _____

Route No/Street Address _____

Village or City _____

Town _____

County _____

7. Nature of Project - Check One:

- ☐ 1. New Building
- ☐ 2. Addition to Existing Structure
- ☐ 3. Heavy and Highway Construction (New and Repair)
- ☐ 4. New Sewer or Waterline
- ☐ 5. Other New Construction (Explain)
- ☐ 6. Other Reconstruction, Maintenance, Repair or Alteration
- ☐ 7. Demolition
- ☐ 8. Building Service Contract

8. OCCUPATION FOR PROJECT :

- ☐ Construction (Building, Heavy Highway/Sewer/Water)
- ☐ Tunnel
- ☐ Residential
- ☐ Landscape Maintenance
- ☐ Elevator maintenance
- ☐ Exterminators, Fumigators
- ☐ Fire Safety Director, NYC Only
- ☐ Fuel Delivery
- ☐ Guards, Watchmen
- ☐ Janitors, Porters, Cleaners, Elevator Operators
- ☐ Moving furniture and equipment
- ☐ Trash and refuse removal
- ☐ Window cleaners
- ☐ Other (Describe)

9. Does this project comply with the Wicks Law involving separate bidding? YES ☐ NO ☐

10. Name and Title of Requester

Signature

SEE PAGE TWO FOR LAWS RELATING TO PUBLIC WORK CONTRACTS

NEW YORK STATE DEPARTMENT OF LABOR
Bureau of Public Work - Debarment List

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Under Article 8 and Article 9 of the NYS Labor Law, a contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work or public building service contract/sub-contract with the state, any municipal corporation or public body for a period of five (5) years from the date of debarment when:

- Two (2) final determinations have been rendered within any consecutive six-year (6) period determining that such contractor, sub-contractor and/or its successor has WILLFULLY failed to pay the prevailing wage and/or supplements;
- One (1) final determination involves falsification of payroll records or the kickback of wages and/or supplements.

The agency issuing the determination and providing the information, is denoted under the heading 'Fiscal Officer'. DOL = New York State Department of Labor; NYC = New York City Comptroller's Office; AG = New York State Attorney General's Office; DA = County District Attorney's Office.

Debarment Database: To search for contractors, sub-contractors and/or their successors debarred from bidding or being awarded any public work contract or subcontract under NYS Labor Law Articles 8 and 9, or under NYS Workers' Compensation Law Section 141-b, access the database at this link: https://apps.labor.ny.gov/EDList/searchPage.do

For inquiries please call 518-457-5589.

NYSDOL Bureau of Public Work Debarment List 08/14/2026

Article 8

AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	DOL	*****5784	A.J.M. TRUCKING, INC.		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	DOL		AKHLAQ OULAKH		4307 28TH AVE ASTORIA NY 11103	10/11/2024	10/11/2029
DOL	DOL		ALEXANDER DELISA		411 THEODORE FREMND SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	NYC		ALL COUNTY SEWER & DRAIN, INC.		7 GREENFIELD DR WARWICK NY 10990	03/25/2022	03/25/2027
DOL	DOL	*****8387	AMERICAN PAVING & MASONRY, CORP.		8 FOREST AVE GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	DOL	*****8654	AMERICAN PAVING, INC.		8 FORREST AVE. GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	NYC	*****8017	AMIN ELECTRICAL CORP.		97-23 218TH STREET QUEENS VILLAGE NY 11429	12/04/2025	12/04/2030
DOL	DOL		ANGELO STANCO		8 FOREST AVE. GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	DOL		ANGELO TONDO		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL	*****4231	ANKER'S ELECTRIC SERVICE, INC.		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
DOL	DOL		ANTHONY CASALE		20 HEATHER RIDGE ROAD TROY NY 12180	05/20/2025	05/20/2030
DOL	DOL		ANTHONY MONGELLI		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	DOL	*****8421	B & B DRYWALL, INC		206 WARREN AVE APT 1WHITE PLAINS NY 10603	12/14/2021	12/14/2026
DOL	DOL	*****3932	B ROC CONSTRUCTION INC		7307 WOODSIDE ROAD VICTOR NY 14564	05/06/2025	05/06/2030
DOL	DA	*****2404	BJA RENOVATION, CORP		33 DOLLARD DR NORTH BABYLON NY 11703	03/19/2025	03/19/2030
DOL	DOL	*****5078	BLACK RIVER TREE REMOVAL, LLC		29807 ANDREWS ROAD BLACK RIVER NY 13032	10/17/2023	10/17/2028
DOL	DOL		C.M.C CONTRACTORS, INC.		500 WEST PUTNAM AVE SUITE 400GREENWICH CT 06830	09/03/2025	09/03/2030
DOL	DOL		CARLOS F. ESCOBAR		411 THEODORE FREMD AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL		CARLOS FIGUEROA		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL	*****4155	CASA BUILDERS, INC.	FRIEDLANDER CONSTRUCTION	64 N PUTT CONNERS ROAD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	DOL		CESAREO TULA		120 SEARS AVE ELMSFORD NY 10523	09/26/2025	09/26/2030
DOL	DOL	*****2292	CHAMPION MAINTENANCE CONTRACTORS, INC.		211 SOUTH RIDGE STREET RYE BROOK NY 10573	09/03/2025	09/03/2030
DOL	NYC	*****2117	CHARAN ELECTRICAL ENTERPRISES		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	DOL		CHARLES CASALE		55 MAIN AVENUE WYNANTSKILL NY 12198	05/20/2025	05/20/2030
DOL	DOL		CHARLES CASALE		55 MAIN AVENUE WYNANTSKILL NY 12198	05/20/2025	05/20/2030
DOL	DOL		CHRISTOPHER PEROSI		5507 NESCONSET HIGHWAY MT. SINAI NY 11766	07/17/2025	07/17/2030
DOL	DOL	*****2281	CORRAO TRUCKING, INC.		PO BOX 393 NANUET NY 10954	09/17/2024	09/17/2029
DOL	DOL		CRAIG JOHANSEN		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
DOL	DOL	*****7619	DANCO CONSTRUCTION UNLIMITED INC.		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
DOL	DOL		DANIEL DELISA		211 SOUTH RIDGE STREET RYE BROOK NY 10573	09/03/2025	09/03/2030
DOL	DOL		DANIEL LOHAN		6836 N. LEXINGTON LANE NILES IL 60714	05/28/2026	05/28/2031
DOL	DOL		DANIEL ROBERT MCNALLY		7 GREENFIELD DRIVE WARWICK NY 10990	03/25/2022	03/25/2027
DOL	DOL		DARWIN PEGUESE		6400 BALTIMORE NATIONAL SUITE 602CANTONSVILLE NY 21228	10/24/2024	10/24/2029
DOL	DOL		DAVID FRIEDLANDER		64 NORTH PUTT CORNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	DOL		DENISE NAGLE		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030

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DOL	DOL		DINA TAYLOR		64 N PUTT CONNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	DOL	*****2337	EGL DRAINAGE SOLUTION & REPAIRS LLC		5507 NESCONSET HIGHWAY MT. SINAI NY 11766	07/17/2025	07/17/2030
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTR		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/3002
DOL	DOL		EMIL KISZKO		84 DIAMOND ST BROOKLYN NY 11222	07/18/2024	07/18/2029
DOL	DOL	*****3298	EMJACK CONSTRUCTION CORP.		84 DIAMOND ST BROOKLYN NY 11222	07/18/2024	07/18/2029
DOL	DOL	*****3298	EMJACK CONSTRUCTION LLC		4192 SIR ANDREW CIRCLE DOYLESTOWN PA 18902	07/18/2024	07/18/2029
DOL	NYC		ENRICO MANETTA		101 MALBA DR. WHITESTONE NY 11357	04/01/2026	04/01/2031
DOL	DOL		EUGENIUSZ "GINO" KUCHAR		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	DOL	*****2998	G.E.M. AMERICAN CONSTRUCTION CORP.		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
DOL	NYC		GHANSHYAM AMIN		97-23 218TH STREET QUEENS VILLAGE NY 11429	12/04/2025	12/04/2030
DOL	DA		GIOVANNA TRAVALJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DA		GIOVANNI NAPOLITANO		2501 BAYVIEW AVENUE WANTAGH NY 11793	02/21/2024	02/21/2029
DOL	DA	*****0213	GORILLA CONTRACTING GROUP, LLC		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DA	*****4760	GTX CONSTRUCTION ASSOCIATES, CORP		2501 BAYVIEW AVE WANTAGH NY 11793	02/21/2024	02/21/2029
DOL	DOL		HENRY WICKE A/K/A HENRY WICKE, JR.		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL	*****6961	HUNTER ELEVATOR COMPANY, INC.		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030
DOL	DOL	*****2397	ISLAND BREEZE MARINE, INC.		6400 BALTIMORE NATIONAL CANTONSVILLE MD 21228	10/24/2024	10/24/2029
DOL	DOL	*****5010	J. LINDSLEY ENTERPRISE, LLC		1002 STATE ROUTE 176 FULTON NY 13069	07/30/2025	07/30/2030
DOL	DOL	*****0241	J. LINDSLEY ROOFING, LLC		211 NORTH 2ND STREET FULTON NY 13069	07/30/2025	07/30/2030
DOL	DOL		J.M.J CONSTRUCTION		151 OSTRANDER AVENUE SYRACUSE NY 13205	11/21/2022	11/21/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	12/12/2022	12/12/2027
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JAMES J. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL		JAMES LINDSLEY		211 NORTH 2ND STREET FULTON NY 13069	07/30/2025	07/30/2030

DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL	*****7993	JBS DIRT, INC.		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL	*****2435	JEFFEL D. JOHNSON	JMJ7 AND SON	5553 CAIRNSTRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JEFFEL JOHNSON ELITE CARPENTER REMODEL AND CONSTRUCTION		C2 EVERGREEN CIRCLE LIVERPOOL NY 13090	11/21/2022	11/21/2027
DOL	DOL	*****2435	JEFFREY M. JOHNSON	JMJ7 AND SON	5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JENNIFER LINDSLEY		211 NORTH 2ND STREET FULTON NY 13069	07/30/2025	07/30/2030
DOL	DOL		JERRY DASTON		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030
DOL	DOL		JMJ7 & SON CONSTRUCTION, LLC		5553 CAIRNS TRAIL LIVERPOOL NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 AND SONS CONTRACTORS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS		7014 13TH AVENUE BROOKLYN NY 11228	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS AND SONS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS, LLC		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JOHN NAGLE A/K/A JOHN NAGLE, JR.		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030
DOL	DOL		JONATHAN DELISA		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL		JORGE FIGUEROA		411 THEODORE FRMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DA		JOSEPH DEMASCO		33 DOLLARD DRIVE NORTH BABYLON NY 11703	01/30/2026	01/30/2031
DOL	DA		JOSEPH DEMASCO		33 DOLLARD DRIVE NORTH BABYLON NY 11703	03/19/2025	03/19/2030
DOL	DOL		JOSEPH HALL		937 US ROUTE 11 CENTRAL SQUARE NY 13036	10/21/2024	10/21/2029
DOL	DOL	*****2271	JOSEPH HALL COMPANIES LLC		937 US ROUTE 11 CENTRAL SQUARE NY 13036	10/21/2024	10/21/2029
DOL	DOL		JOSEPH K. SALERNO		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL		JOSEPH K. SALERNO II		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		JRN CONSTRUCTION CO, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002

DOL	DOL		KEAN INDUSTRIES, LLC		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		KEVIN FUNEZ URBINA A/K/A KEVIN FUNEZ		1009 LYNDALE AVE TRENTON NJ 08629	12/16/2024	12/16/2029
DOL	DOL		KIMBERLY F. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL	*****8760	KJ&J CONSTRUCTION, LLC		1009 LYNDALE AVE TRENTON NJ 08629	12/16/2024	12/16/2029
DOL	DOL		KMA GROUP II, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL	*****1833	KMA GROUP INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KMA INSULATION, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KRIN HEINEMANN		2345 ROUTE 52, SUITE 2N HOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	NYC		KULWANT S. DEOL		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL	*****3716	LIGHTNIN ELECTRIC INC.		3418 NORTHERN BLVD SUITE 5-27LONG ISLAND CITY NY 11101	12/13/2024	12/13/2029
DOL	AG	*****3291	LINTECH ELECTRIC, INC.		3006 TILDEN AVE BROOKLYN NY 11226	02/16/2022	02/16/2027
DOL	DOL		LIZETTE PONCE		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	NYC	*****7516	MANCO ENTERPRISES OF NY, INC.		44-17 54TH DR. MASPETH NY 11378	04/01/2026	04/01/2031
DOL	NYC	*****1783	MANETTA ENTERPISES, INC. D/B/A MANETTA INDUSTRIES		44-17 54TH DR. MASPETH NY 11378	04/01/2026	04/01/2031
DOL	DA		MANUEL P TOBIO		150 KINGS STREET BROOKLYN NY 14444	08/19/1998	08/19/2998
DOL	DA		MANUEL TOBIO		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	DOL		MOHAMMAD MIAN		8269 21ST ST BELLEROSE NY 11426	12/22/2022	12/22/2027
DOL	NYC		NASEER CHAUDHRY		2349 BRAGG STREET BROOKLYN NY 11229	04/22/2025	04/22/2030
DOL	DOL	*****7790	NATIONAL BUILDING & RESTORATION CORP		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	*****1797	NATIONAL CONSTRUCTION SERVICES, INC		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	NYC		NAVIT SINGH		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		NELCO CONTRACTING, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DA		NICHOLAS BARNETT		33 DOLLARD DR BABYLON NY 11703	03/04/2025	03/04/2030
DOL	DOL		NICHOLAS RAO		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DA		NICHOLAS T. ANALITIS		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027

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DOL	DOL		NIKOLA NTONI		3418 NORTHERN BLVD SUITE 5-27LONG ISLAND CITY NY 11101	12/13/2024	12/13/2029
DOL	NYC	*****6971	NN CONSTRUCTION, INC.		2349 BRAGG STREET BROOKLYN NY 11229	04/22/2025	04/22/2030
DOL	NYC	*****5643	NYC LINE CONTRACTORS, INC.		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL	*****4168	PHANTOM CONSTRUCTION CORP.		95-27 116TH STREET QUEENS NY 11419	07/12/2024	07/12/2029
DOL	DOL	*****4168	PHANTOM CONSTRUCTION CORP.		95-27 116TH STREET QUEENS NY 11419	05/28/2024	05/28/2029
DOL	DOL	*****2041	QUALITY STEEL ERECTORS INC.		6836 N. LEXINGTON LANE NILES IL 60714	05/28/2026	05/28/2031
DOL	DOL	*****4772	R.W. LOBDELL CONSTRUCTION LLC		635 WEST DRYDEN ROAD FREEVILLE NY 13068	01/31/2025	01/31/2030
DOL	DOL	*****2633	RAW POWER ELECTRIC CORP.		3 PARK CIRCLE MIDDLETOWN NY 10940	07/11/2022	07/11/2027
DOL	DOL		ROBBYE BISSESAR		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	01/11/2003	01/11/3003
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	07/11/2022	07/11/2027
DOL	DOL		ROSA GARCIA		411 THEODORE FRMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL	*****7172	RZ & AL INC.		198 RIDGE AVENUE VALLEY STREAM NY 11581	06/06/2022	06/06/2027
DOL	DA	*****0476	SAMCO ELECTRIC CORP.		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DA		SILVANO TRAVALJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	NYC	*****3661	SPANIER BUILDING MAINTENANCE CORP		200 OAK DRIVE SYOSSET NY 11791	03/14/2022	03/14/2027
DOL	DOL		STANADOS KALOGELAS		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
DOL	DOL	*****3496	STAR INTERNATIONAL INC		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	08/11/2003	08/11/3003
DOL	DOL		STEVEN DELISA		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL	*****9150	SURGE INC.		8269 21ST STREET BELLEROSE NY 11426	12/22/2022	12/22/2027
DOL	DOL		SYED MUHAMMAD S. JAFRI A/K/A SHARRUKH JAFRI		4307 28TH AVE ASTORIA NY 11103	10/11/2024	10/11/2029
DOL	DOL		SYED RAZA		198 RIDGE AVENUE NY 11581	06/06/2022	06/06/2027
DOL	DOL		TARLOK SINGH		95-27 116TH STREET QUEENS NY 11419	05/28/2024	05/28/2029
DOL	DOL		TARLOK SINGH		95-27 116TH STREET QUEENS NY 11419	07/12/2024	07/12/2029
DOL	DOL	*****4855	TECH INDUSTRIES LLC		20 HEATHER RIDGE ROAD TROY NY 12180	05/20/2025	05/20/2030
DOL	DOL	*****2426	THE MATRUKH GROUP, INC.		4307 28TH AVE PO BOX 9082ASTORIA NY 11103	10/11/2024	10/11/2029
DOL	DOL		THOMAS LOBDELL		635 WEST DRYDEN ROAD FREEVILLE NY 13068	01/31/2025	01/31/2030
DOL	DOL		TIMOTHY PERCY		29807 ANDREWS ROAD BLACK RIVER NY 13612	10/17/2023	10/17/2028
DOL	DA	*****1050	TRI STATE CONSTRUCTION OF NY CORP.		50-39 175TH PLACE FRESH MEADOWS NY 11365	03/28/2022	03/28/2027
DOL	DOL	*****8485	TULA PLUMBING AND HEATING LLC		120 SEARS AVE ELMSFORD NY 10523	09/26/2025	09/26/2030
DOL	DOL	*****8210	UPSTATE CONCRETE & MASONRY CONTRACTING CO INC		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL		VINCENT CORRAO		PO BOX 393 NANUET NY 10954	09/17/2024	09/17/2029
DOL	DOL		WILLIAM A BELL		7307 WOODSIDE ROAD VICTOR NY 14564	05/06/2025	05/06/2030
DOL	DOL	*****8266	WILLIAM CHRIS MCCLENDON	MCCLENDON ASPHALT PAVING	1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028

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DOL	DOL		WILLIAM CHRIS MCCLENDON		1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028
DOL	DOL		WILLIAM SCRIVENS		4192 SIR ANDREW CIRCLE DOYELSTOWN PA 18902	07/18/2024	07/18/2029
DOL	DOL	*****9494	WND CONSTRUCTION LLC		411 THEODORE FREMD AVENUE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL		XENOFON EFTHIMIADIS		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028

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RENOVATION SURVEY
FOR
ASBESTOS-CONTAINING MATERIALS, LEAD-BASED PAINT & PCBs

PERFORMED AT:

Yonkers Armory
2 Quincy Place
Yonkers, New York 10701
Adelaide Project# BA:23168.00-IN
OGS Project# 47477

PREPARED FOR:

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June 15, 2023

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Stephanie A. Soter
President

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1.0 Introduction

1.1 Scope of Work / Project Personnel

Adelaide Environmental Health Associates, Inc. **(Adelaide)** performed an Asbestos, Lead and PCB Survey for Building/Structure Demolition, Renovation, Remodeling and/or Repair, in conformance with ALL Federal, State and Local regulations for Bergmann:

SURVEY LOCATION(S):	Yonkers Armory, 2 Quincy Place, Yonkers, New York 10701
SURVEY DATE(S):	June 6, 2023
SCOPE OF WORK:	Entire building renovation excluding the roof.
SCOPE OF WORK BUILDING/ STRUCTURE PLANS UTILIZED:	As built drawings from 1985 were utilized for the inspection.
CERTIFIED ADELAIDE PERSONNEL:	Jason Fullum (NYS Asbestos Inspector/Cert. #97-20574 and EPA Lead-based Paint Risk Assessor/Cert. #LBP-R-12098-2)
SITE CONTACT(S):	Trentin Reese - Bergmann

1.2 Executive Summary

On June 6, 2023, **Adelaide** inspected the first floor, second floor and exterior areas that will be affected by the proposed scope of work for suspect ACM, LBP and PCBs.

SUSPECT HAZARDOUS MATERIAL	SAMPLE(S)/LAYER(S)/ READING(S) COLLECTED	SAMPLE(S) / HOMOGENEOUS AREA(S) IDENTIFIED POSITIVE
Asbestos-containing Materials (ACM):	56	0
Lead-based Paint (LBP):	31 (plus calibrations)	0
PolyChlorinated Biphenyls (PCB):	6	0

The following indicates assumed materials due to live electric at the time of the inspection.

- PACM electrical wiring insulation and panels, mirror mastic

There are **asbestos materials that will be impacted** by this scope of work as described in section 1.1. These materials are listed in section 2.1.

1.3 Conclusions and Recommendations

The following conclusions and recommendations are prepared by **Adelaide** as per the provided scope of work for Building/Structure Demolition, Renovation, Remodeling and/or Repair. Should the scope of work change, it is recommended that the findings be revisited to determine if additional sampling will be required to satisfy ALL Federal, State and Local regulations.

The materials sampled, as part of this survey, were limited to building materials potential affected by the provided scope of work only. All building materials outside the scope of work that have the potential to be disturbed, impacted, or if the scope of work is to change, are to be presumed asbestos-containing materials (PACM). Identified PACM **must** either be sampled by a licensed NYS Asbestos Inspector and/or abated/removed and disposed of by a licensed NYS Asbestos Abatement Contractor.

1.4 Asbestos-containing Materials (ACM)

- This survey concluded that the materials listed in Section 2.1 are assumed ***positive for asbestos***.

- There are asbestos materials that will be impacted by this scope of work. These materials are listed in section 2.1. Refer to Appendix A for the approximate location of the above materials in the affected scope of work.

- Subpart 56-5(h) of 12 NYCRR Part 56 requires that no demolition, renovation, remodeling, or repair work be commenced by any owner or the owner's agent prior to the completion of asbestos abatement. Asbestos abatement must be performed by an asbestos abatement contractor that maintains a current asbestos handling license and employs NYSDOL/NYCDEP certified asbestos handlers and supervisors. It is recommended that a 12 NYCRR 56 certified Project Monitor oversee abatement activities.

- Subpart 56-5(g) of 12 NYCRR Part 56 specifies requirements for transmittal of asbestos survey information by the owner or owner's agent. (1) One copy of the asbestos survey report shall be sent to the local government entity charged with issuing a permit for such demolition, renovation, remodeling, or repair work under applicable State or local laws. (2) If controlled demolition or pre-demolition activities will be performed, one copy of the asbestos survey report shall be submitted to the appropriate Asbestos Control Bureau district office. (3) One copy of the asbestos survey report must be kept on the construction site throughout the duration of the asbestos project and any associated demolition, renovation, remodeling, or repair project.

1.5 Lead-based Paint (LBP)

- This survey concluded that the readings summarized in Section 2.3 and Appendix E tested ***negative for lead-based paint.***

1.6 PolyChlorinated Biphenyls (PCB)

- This survey concluded that the materials listed in Section 2.4 and Appendix F tested ***negative for PCBs.***

2.0 Summary of Hazardous Materials

2.1 Summary of Identified ACM/PACM

KEY: **ACM** = Materials containing greater than 1% of asbestos; **HA** = Homogeneous Area; **LF** = Linear Feet; **SF** = Square Feet; **PACM** = Presumed Asbestos-containing Materials; **Friable** = ACM capable of being released into air, and which can be crumbled, pulverized, powdered, crushed or exposed by hand-pressure; [A] = Material is considered non-friable solely in an intact and undisturbed state, however, may be rendered friable if pulverized or crumbled while in dry state.

Samples collected by **Adelaide** June 6, 2023

HA	Identified ACM	ACM Location(s)	Approx. Qty.	Condition	Friable? (Yes or No)
PACM	Electrical Wire Insulation and Panels	Throughout	Unknown	Unknown	No

HA	Identified ACM	ACM Location(s)	Approx. Qty.	Condition	Friable? (Yes or No)
PACM	Bathroom Mirror Mastic	Men's and Women's Bathrooms and Locker Rooms	11 Mirrors	Good	No

2.2 Summary of Identified Non-ACM

Samples collected by **Adelaide** June 6, 2023

Identified Non-ACM	Sample Location(s)
12x12 Brown/Red Mottled Floor Tile	2nd Floor
Black Floor Mastic	
2x4 Ceiling Tile – Large and Small Holes	
Debris on Top of Ceiling Tiles	
2x4 Ceiling Tile – Squiggles and Holes	
CMU Mortar	Throughout
4" Black Covebase and Mastic	
Yellow Carpet Mastic	2nd Floor
12x12 Green Mottled Floor Tile	
Drywall Ceiling and Joint Compound	Throughout
12x12 Brown and White Mottled Floor Tile	2nd Floor
12x12 White with Gray Specks Floor Tile	
Terrazzo Shower Base	Locker Rooms
Sealant at Shower	
Exterior Door Glazing Compound	Throughout
Exterior Door Sealant	
Concrete	
Brick Mortar	
Exterior Vertical Sealant	
Pin Mastic on Ductwork	Boiler Room
Wall Tile – Grout and Mudset	Kitchen
Floor Tile – Grout and Mudset	
Exterior Door Caulk	Throughout
Exterior Louver Caulk	

2.3 Summary of Identified LBP

Based on review of the data generated by the Viken Pb200e X-Ray Fluorescence (XRF) Analyzer(s), the following surfaces tested were identified as lead-based, as defined by HUD/EPA (equal to or in excess of 1.0 milligram per square centimeter):

Readings collected by **Adelaide** June 6, 2023

Location of LBP	LBP Component	Substrate	Color	Condition	Readings (mg/cm2)
NO Lead-based Paints identified above HUD/EPA standards of readings collected in reference to the above-mentioned scope of work.					

2.4 Summary of Identified PCB-containing Materials

Samples collected by **Adelaide** June 6, 2023

Sample #	Location / Description	Material Matrix	Color	Substrate	Analytical Result
NO PCB-containing materials were identified above the USEPA 40 CFR 761 threshold of 50 ppm(mg/kg) of samples collected/analyzed in reference to the above-mentioned scope of work.					

2.5 Observations

ASBESTOS-CONTAINING MATERIALS (ACM)
A visual inspection was performed, and homogeneous material types were established based on appearance, color and texture. The findings presented in this report are based upon reasonably available information and observed site conditions at the time the assessment was performed. The findings and conclusions of this report are not meant to be indicative of future conditions at the site and does not warrant against conditions that were not evident from visual observations or historical information obtained from others.

On June 6, 2023, representative bulk sampling was performed on suspect building materials for laboratory analysis and the following is a summary of installed building materials sampled as per the scope of work provided:

- Ceiling Materials – Ceiling Tiles, Drywall, Joint Compound.
- Wall Materials – CMU Mortar, Brick Mortar, Covebase and Mastic, Grout, Mudset
- Flooring Materials – Floor Tiles, Mastics, Grout, Mudset
- Miscellaneous Materials – Terrazzo, Sealants, Glazing Compound, Concrete, Pin Mastic
- Non-suspect Materials (not sampled) – Fiberglass Insulation, Wood, Glass, Metal.

3.0 Asbestos-containing Materials (ACM)

3.1 Field Procedures and Analysis Methodology

Guidelines used for the inspection were established by the U.S. Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, DOC# 560/5-85-024 and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA) and Title 12 NYCRR Part 56-5.1. Field information was organized as per the AHERA concept of a

homogeneous area (HA); that is, suspect Asbestos-containing Materials (ACM) with similar age, appearance, and texture were grouped together, sampled and assessed for condition.

For the purposes of this inspection, suspect ACM has been placed in three material categories: thermal, surfacing, and miscellaneous. 1) Surfacing materials are those that are sprayed on, troweled on or otherwise applied to surfaces for fireproofing, acoustical, or decorative purposes (e.g., wall and ceiling plaster). 2) Thermal materials are those applied to heat pipes or other structural components to prevent heat loss or gain or prevent water condensation (e.g., pipe and fitting insulation, duct insulation, boiler flue). 3) Miscellaneous materials are interior building materials on structural components, structural members or fixtures, such as floor and ceiling tiles, etc. and do not include surfacing material or thermal system insulation.

SURFACING MATERIALS

Surfacing materials were grouped into homogeneous sampling areas. A homogeneous area contains material that is uniform in color and texture and appears identical in every other respect. Materials installed at different times belong to different sampling areas. Homogeneous areas were determined on per floor basis.

The following protocol was used for determining the number of samples to be collected:

- At least three bulk samples were collected from each homogeneous area that is 1,000 square feet or less.
- At least five bulk samples were collected from each homogeneous area that is greater than 1,000 square feet but less than or equal to 5,000 square feet.
- At least seven bulk samples were collected from each homogeneous area that is greater than 5,000 square feet.

THERMAL SYSTEM INSULATION (TSI)

The concept of homogeneous sampling areas applies equally well to thermal insulation as to surfacing material. A "typical" building may contain multiple insulated pipe runs from any combination of the following categories:

- Hot water supply and/or return
- Cold water supply
- Chilled water supply
- Steam supply and/or return
- Roof or system drain

The following protocol was used for determining the number of samples to be collected.

- Collect at least three bulk samples from each homogeneous area of thermal system insulation.
- Collect at least one bulk sample from each homogeneous area of patched thermal system insulation if the patched section is less than 6 linear or square feet.
- In a manner sufficient to determine whether the material is ACM or not ACM, collect a minimum of three bulk samples from each homogeneous insulated mechanical system tee, elbow, and valve.

Bulk samples are not collected from any homogeneous area where the certified inspector has determined that the thermal system insulation is fiberglass, foam glass, or rubber.

MISCELLANEOUS MATERIALS

Miscellaneous materials are grouped into different homogeneous areas and at least two bulk samples are collected from each homogeneous area as per the clarification letter from the EPA and the Professional Abatement Contractors of New York, Inc in November of 2007.

Samples collected were analyzed by a laboratory approved under the New York State Department of Health Environmental Laboratory Approval Program (NYSDOH ELAP). Samples were analyzed in the laboratory by Polarized Light Microscopy (PLM), Polarized Light Microscopy-NOB (PLM-NOB) and/or Quantitative Transmission Electron Microscopy (QTEM), as required. Sample collection and laboratory analysis were conducted in compliance with the requirements of Title 12 NYCRR Part 56-5.1, 29 CFR 1926.1101 and standard EPA & OSHA accepted methods. Samples consisting of multiple layers were separated and analyzed independently in the laboratory.

3.2 Regulatory Guidelines and Requirements for ACM

FEDERAL

In accordance with the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) established National Emission Standards for hazardous Air Pollutants (NESHAP) to protect the public from exposure to airborne pollutants. Asbestos was one of the air pollutants, which was addressed under the NESHAP 40 CFR Part 61. The purpose of asbestos NESHAP regulations is to protect the public health by minimizing the release of asbestos when facilities, which contain ACM, are being renovated or demolished. EPA is responsible for enforcing regulations related to asbestos during renovations and demolition, however, the CAA allows the EPA to delegate this authority to State and Local Agencies. Even after EPA delegate's responsibility to a state or Local agency, EPA retains the authority to oversee agency performance and to enforce NESHAP regulations as appropriate.

NEW YORK STATE

Asbestos in New York State is regulated under the Labor Law Section 906, Part 56 of Title 12 of the Official Compilation of Codes, Rules, and Regulations. Within the department and for the purpose of the Department of Labor, this part (rule) is known as Industrial Code Rule No. 56 (ICR 56) relating to hazards to the public safety and health, during the removal, encapsulation, or disturbance of friable asbestos, or any handling of ACM that may result in the release of asbestos fiber.

As specified in Title 12 NYCRR Part 56-5.1 (h) and (i), "If the building/structure asbestos survey finds that the portion of the building/structure to be demolished, renovated, remodeled, or have repair work contains ACM, PACM, suspect miscellaneous ACM assumed to be ACM, or asbestos material, which is impacted by the work, the owner or the owner's agent shall conduct, or cause to have conducted, asbestos removal performed by a licensed asbestos abatement contractor in conformance with all standards set forth in this Part. All ACM, PACM, suspect miscellaneous ACM assumed to be ACM, or asbestos material impacted by the demolition, renovation, remodeling or repair project shall be removed as per this Part, prior to access or disturbance by other uncertified trades or personnel. No demolition, renovation, remodeling or repair work shall be commenced by any owner or the owner's agent prior to the completion of the asbestos abatement in accordance with the notification requirements of this Part…All building/structure owners and asbestos abatement contractors on a demolition, renovation, remodeling, or repair project, which includes work covered by this part, shall inform all trades on the work site about PACM, ACM, asbestos material and suspect miscellaneous ACM…Bids may be advertised and contracts

awarded for demolition, remodeling, renovation, or repair work, but no work on the current intermediate portion of the project shall commence on the demolition, renovation, remodeling or repair work by any owner or agent prior to completion of all necessary asbestos abatement work for the current intermediate portion of the entire project, in conformance with all standards set forth in this Part." All work conducted should be in accordance with all legal requirements, including but not limited to U.S. Environmental Protection Agency (EPA) National Emissions Standards for Hazardous Air Pollutants (NESHAP) [40 CFR Part 61], New York State Industrial Code Rule 56 Asbestos Regulations (ICR 56) and Chapter 1 of Title 15 of the Rules of the City of New York Regulations, as applicable. Advance notification of the asbestos project to the USEPA, NYSDOL, and NYCDEP may be required.

CONCEALED ACM

In addition to the ACMs identified at the site, there is a possibility that concealed suspect ACM may exist at the building/structure. As such, if any concealed suspect ACM is encountered during future construction related activities, the work should immediately stop. Prior to resuming the work, the suspect ACM should either be 1) Sampled by an appropriately-certified asbestos professional and submitted to an Approved NYSDOH ELAP laboratory for asbestos analysis or 2) Presumed to be ACM (PACM) and removed by a licensed asbestos abatement contractor for disposal in accordance with all applicable regulations.

4.0 Lead-based Paint (LBP)

4.1 Applicable Standards/Guidelines for LBP

The U.S Department of Housing and Urban Development (HUD) defines the action level for lead-based paint as a lead content equal to or greater than 1.0 milligrams of lead per square centimeter of painted surface (≥1.0 mg Pb/cm^2) when measured with an XRF analyzer or 0.5 percent by weight when chemically tested. This definition is described in the HUD "Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing, September 1990". The state of New York's definition of the action level for lead-based paint is consistent with the level established by HUD.

Please note that although the HUD defines lead-based paint as paint having lead concentrations equal or greater than 1.0 mg/cm2, the Occupational Safety and Health Administration (OSHA) considers any concentration of lead in paint to be lead-containing paint. Regardless of the lead concentrations in paint, the contractor shall comply with 29 CFR 1926.62, OSHA regulations, and take precautionary measures for dust control and limit employee exposure to lead dust during the renovations.

Painted surfaces that would be impacted by planned activities such as drilling, cutting, scrapping, etc. and create dust should be properly addressed by following safe work practices, good housekeeping procedures and/or following proper abatement procedures. Grinding and sanding of paint without HEPA filter exhaust, open flame gas fired torch, unconfined abrasive blasting, and chemical strippers containing methylene chloride or other human carcinogenic chemicals are not recommended.

The Federal Resource Conservation and Recovery Act (RCRA) regulation governs the handling, transportation, and disposal of hazardous materials. Every demolition/renovation debris generator has the responsibility to determine whether the debris exhibits one or more of the characteristic wastes listed in subpart C of 40 CFR Part 261. In the case of demolition debris, lead in LBP is a characteristic waste, and therefore, it is the responsibility of the renovation/demolition debris generator to characterize the waste

prior to its disposal and, if found to be hazardous waste as defined by Federal Statutes, to be properly handled and disposed.

Metal objects painted with LBP are exempt from disposal regulations applicable to lead, provided they are properly recycled. All metal objects that are painted with LBP should be sent to a certified recycling facility.

This report is not Lead-based Paint abatement specification and should not be used for specifying removal methods or techniques.

4.2 XRF Information

Viken Pb200e X-Ray Fluorescence (XRF) Analyzer(s) were used to survey the building/structure or portion thereof identified to be demolished, renovated, remodeled or repaired for the presence of LBP. The Viken Pb200e XRF Analyzer(s) are using a sealed source of Co-57 with 6mCi sources, meeting HUD requirements for the analysis of paint films. During the analysis, the intensity of the x-rays is converted by the instrument's internal software into an estimate of the concentration of lead in the substance being analyzed. The results are interpreted as concentrations of lead in milligrams per square centimeter. This device is a field-screening tool, used to collect multiple readings in a short period of time. The method of measurement is based on spectrometric analysis of lead x-ray fluorescence within a controlled depth of interrogation. The reading is an estimate of lead content in all layers of paint. The results are displayed in milligrams per square centimeter (mg/cm2). The device(s) used for this inspection were the Viken Pb200e X-Ray Fluorescence (XRF) Analyzer(s) Serial Number 2104, Source date 4/1/23, Serial number 2231, Source date 5/15/22, Serial number 2595, Source date 2/15/23 and/or Serial number 2901, Source date 2/15/23.

5.0 PolyChlorinated Biphenyls (PCB)

5.1 Background and Protocol for PCBs

PolyChlorinated Biphenyls (PCB) are a group of manmade chemicals. PCBs were widely used in building materials and electrical products in the past. The U.S. Environmental Protection Agency banned the manufacturing and certain uses of PCBs in 1978, but buildings constructed or renovated between 1950 and 1978 may still have building materials and electrical products that contain PCBs. Examples of products that may contain PCBs include caulk, paint, glues, plastics, fluorescent lighting ballasts, transformers and capacitors.

PCBs are currently prohibited from being used in caulk and other commodities (U.S. EPA, 40 CFR 761). However, prior to 1977, PCBs were present in some caulking materials used in the construction of schools and other buildings. Studies have shown that concentrations of PCB can exceed 1% (10,000 ppm) by weight in some caulk materials. An investigation of 24 buildings in the Greater Boston Area revealed that one-third of the buildings tested (8 of 24) contained caulking materials with polychlorinated biphenyl (PCB) content exceeding 50 ppm by weight with an average concentration of 15,600 ppm or 1.5% (Herrick et al., 2004). These buildings included schools and other public buildings.

The U.S. EPA regulates the disposal of caulk, as well as soil and other materials contaminated with PCBs from caulk, if the concentration of PCBs exceeds 50 ppm. Such materials must be disposed at an appropriate approved or permitted facility.

U.S. EPA regulation 40 CFR 761 defines "PCB remediation waste" to include contaminated soil, and specifies a clean-up level of <1ppm without further conditions for unrestricted use in "high occupancy areas" (i.e., areas where individuals may be present for 335 hours or more per year). PCB caulk is defined as a PCB bulk product waste, and its disposal is subject to U.S. EPA regulations under the Toxic Substances Control Act (40 CFR761.62).

This protocol has been developed in consultation with the New York State Department of Health, Division of Environmental Health Assessment, Bureau of Toxic Substance Assessment to address concerns about properly managing caulk containing PCBs that will be disturbed during building renovation and maintenance.

CAULK SAMPLE COLLECTION

Buildings constructed or renovated between 1950 and 1977 have a potential to contain PCBs in existing caulk. Representative samples of caulking materials from these buildings prior to renovation or demolition work should be tested to determine whether the caulk is contaminated with PCBs. Professional judgement should be used to design the sampling plan for characterizing caulk throughout the building. The consultant should pay particular attention to construction and maintenance records and to the appearance of caulking materials (likenesses and differences). Samples should be taken from window frames or expansion joints that have not been repaired or replaced since 1977. Depending on specific information provided in the workplan developed by the project manager, such as window placement, compositing of some caulk samples might be appropriate. Caulk from different time periods or that have a different appearance should not be composited together.

It is important to note that caulk used during the time period of interest may also contain asbestos or lead. Therefore, the work plan should include testing, handling and disposal requirements appropriate for such regulated materials.

SOIL SAMPLE COLLECTION

Buildings constructed or renovated between 1950 and 1977, which have undergone further renovation after 1977, may have residual PCB contamination in adjacent soils. An adequate representation of surface soils should be tested to assess the potential for residual PCB contamination.

When designing a representative soil sampling plan, the likelihood of soil contamination from deteriorated or deteriorating caulk should be considered. Caulk that has in the past dried out and fallen to the ground is the most important source of soil contamination. Thus, sampling should include soil beneath windows where caulk has obviously deteriorated or been replaced because of previous deterioration. Areas subject to the stress of sun and prevailing weather (typically the southern and western side of each structure) should be included for sampling. These samples would provide a conservative evaluation of soil conditions due to an increased potential for material failure, possibly resulting in contamination of soil. Also, if earlier renovation or demolition work may have stockpiled potentially contaminated caulk in other school areas, the school should consider having soils in those areas tested as well.

Soil sampling should focus on areas of the building where ”banks” or “gangs” of windows exist/were replaced and areas of the structure where large expansion joints are located. This would provide a conservative evaluation of potential soil contamination and permit efficient sampling.

Any obvious pieces of caulk encountered during the collection of soil samples should be removed from the soil, categorized (with respect to location and depth) and treated as a separate potential sample.

Depth – At each soil sample location, soil should be collected in depth intervals of 0-2 inches, 2-6 inches and 6-12 inches. The surface soil sample (0-2 inches) should be collected from below the vegetative surface layer, if present.

Distance from Structure – Samples should be collected within 1 foot of the building and 5 feet from the building.

Samples should be collected in a manner that prevents cross-contamination. Augers or driven core samplers should be avoided, as any caulk caught on the edge of this type of tool could be driven to lower intervals. Using a designated trowel for each sample location and each interval of depth is encouraged. If the sampling tool is field cleaned between samples, do so in a manner that does not add solvent contamination to the environment.

NOTE
Sampling was performed by **Adelaide** in compliance with protocols outlined by New York State Education Department (NYSED) and USEPA 40 CFR 761, as described above. Only one sample per homogeneous area was required for analysis of suspect PCB-containing materials. Bulk sample(s) were properly packaged and forwarded, with associated Chain of Custody (COC), to York Analytical Laboratories, Inc., for analysis using method SW846-3550B/8082. The analysis will determine if the suspect material will be classified as PCB-containing at or above 50 ppm or mg/kg as per the EPA regulations. Copies of the analytical results are contained within attached appendices for review.

6.0 General Discussion

All construction personnel as well as individuals who have access to locations where asbestos-containing materials (ACM), lead-based paints (LBP) and/or polychlorinated biphenyls (PCB) exists should be informed of its presence and the proper work practices in these areas. Conspicuous labeling of all ACM is suggested to ensure personnel is adequately informed. Personnel should be informed not to rest, lean or store material or equipment on or near these surfaces and not to cut, saw, drill, sand or disturb ACM. All removal, disturbance, and repair of ACM should be performed in compliance with Title 12 NYCRR Part 56 by persons properly trained to handle ACM. Facility custodial and maintenance personnel should receive training commensurate with their work activities; as defined in 29 CFR 1910.1001.

7.0 Disclaimers

Adelaide certifies that the information contained within this report is based solely upon site observations and the results of laboratory analysis for samples collected during this survey/assessment. These observations and results are time dependent, subject to changing site conditions and revisions to Federal, State and Local regulations. **Adelaide** warrants that these findings have been promulgated after being prepared in general accordance with generally accepted practices in the abatement industries. **Adelaide** also recognizes that inspection laboratory data is not usually sufficient to make all abatement and management decisions. No other warranties are expressed or implied.

The materials sampled, as part of this survey, were limited to building materials potential affected by the provided scope of work only. All building materials outside the scope of work that have the potential to be disturbed, impacted, or if the scope of work is to change, are to be presumed asbestos-containing materials (PACM). Identified PACM **must** either be sampled by a licensed NYS Asbestos Inspector and/or abated/removed and disposed of by a licensed NYS Asbestos Abatement Contractor.

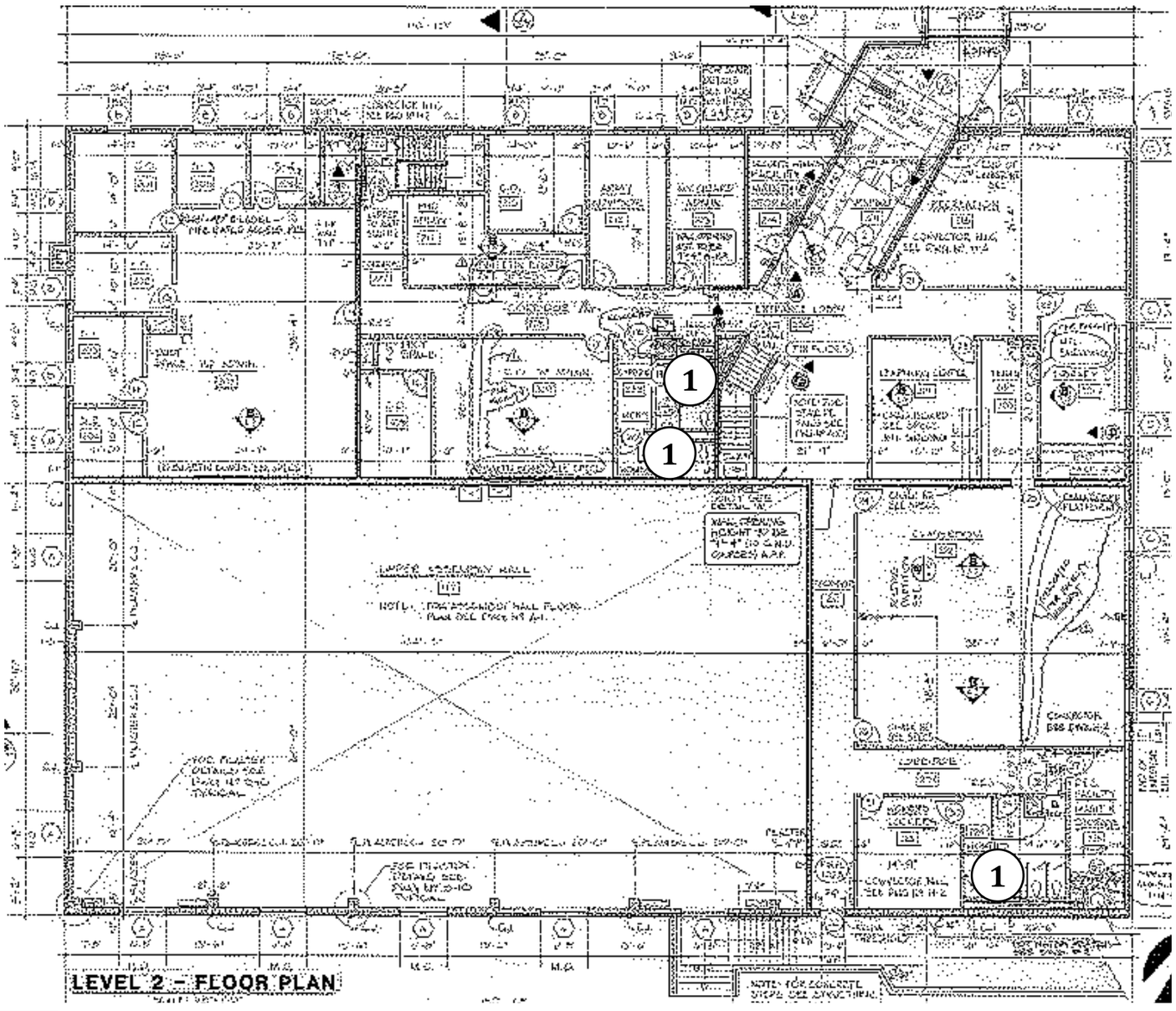
Due to the potential for concealed Asbestos-containing Materials (ACM) and/or other regulated materials, this report should not be construed to represent all ACM and/or regulated materials within the site(s). All quantities of ACM and/or other regulated materials identified, and all dimensions listed within this report are approximate and should be verified On-site.

This report is generated for the exclusive use of the client and is not designed to serve as a specification for abatement. The owner is strongly encouraged to contract with a consultant having a current Asbestos Project Designer Certificate as issued by New York State Department of Labor for the preparation of contract specifications, work plans, and/or drawings prior to requesting bids for the abatement or removal of the materials identified in this report.

NYSDOH issued an Interim Guidance Letter, on July 9, 2013, which outlined the approved testing alternative for materials containing vermiculite. Specifically, "...Where TSI, surfacing materials, or other PACM or miscellaneous suspect ACM contain greater than 10% vermiculite, Item 198.6 may be used to evaluate the asbestos content of the material; provided, however, that any test results using this method must be reported with the following conspicuous disclaimer: *"This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."* On July 22, 2014, NYSDOH issued a Regulatory Guidance Letter outlining the new approved analytical methods for testing sprayed-on fireproofing (SOFP) that contains vermiculite. NYSDOH authorized the use of ***two*** analytical methods to evaluate the asbestos content of SOFP that contains vermiculite. As per NYSDOH Guidelines, *"After October 31, 2014, one of the new methods **must** be used to test SOF-V, regardless of the percent of vermiculite."* On May 6, 2016, NYSDOH issued a Regulatory Guidance Letter outlining the new protocol for analytical procedure for surfacing materials (ie. plaster, stucco, etc.) that contain vermiculite. As per NYSDOH Guidelines, "*The original July 2013 and July 2014 letters addressed SOF-V only. Both NYS DOH's Item 198.8 and RJ Lee Group Method 055 shall now be applied to test for vermiculite in other Surfacing Material (SM) as defined in 12 NYCRR Part 56 (NYS Industrial Code Rule 56).*"

APPENDIX A

ACM LOCATION MAP(S)



ACM LEGEND: (see report for details)	
1	Assumed Mirror Mastic
PACM	Electrical Wire and Panels Throughout

Second Floor Plans - Asbestos Locations

Drawing Not to Scale

Adelaide ENVIRONMENTAL HEALTH
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(Client) Project #

SURVEY LOCATION:
Yonkers Armory
2 Quincy Place
Yonkers, New York 10701

DATE: 6/13/2023

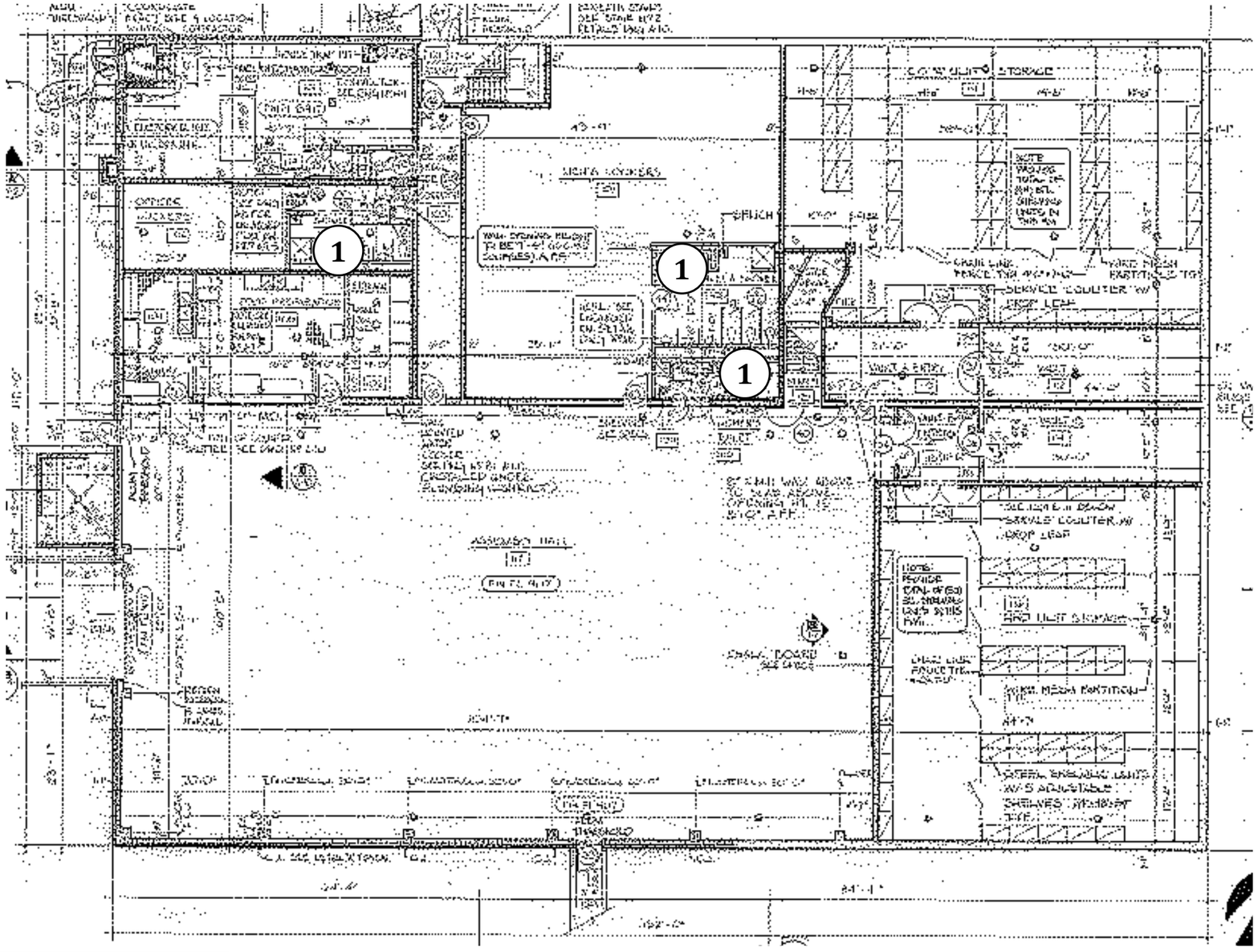
DRAWING VERSION: No. 1

ISSUED FOR:
Asbestos, Lead & PCB Survey

ADELAIDE PROJECT NO.:
BA:23168.00-IN

DRAWING PREPARED BY:
JPF

ASB-01



ACM LEGEND: (see report for details)	
1	Assumed Mirror Mastic
PACM	Electrical Wire and Panels Throughout

First Floor Plans - Asbestos Locations

Drawing Not to Scale

Adelaide ENVIRONMENTAL HEALTH
1511 Route 22
Brewster, NY 10509
Phone: (845) 278-7710
Fax: (845) 278-7750

CLIENT:
Greg Springer
Bergmann: Architects, Engineers, Planners
18 Corporate Woods Blvd., Suite 400
Albany, New York 12211

(Client) Project #

SURVEY LOCATION:
Yonkers Armory
2 Quincy Place
Yonkers, New York 10701

DATE: 6/13/2023

DRAWING VERSION: No. 1

ISSUED FOR:
Asbestos, Lead & PCB Survey

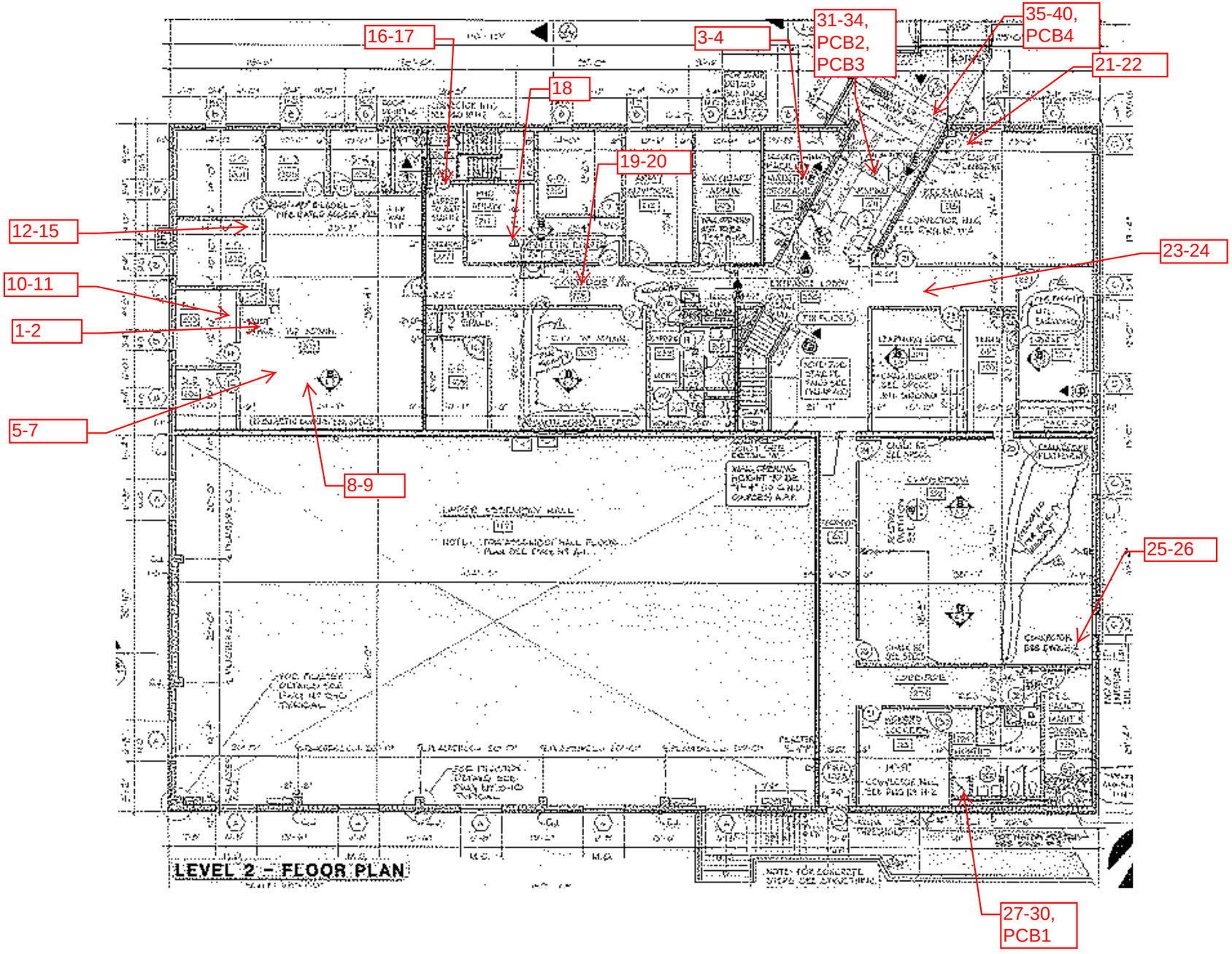
ADELAIDE PROJECT NO.:
BA:23168.00-IN

DRAWING PREPARED BY:
JPF

ASB-02

APPENDIX B

SAMPLE LOCATION MAP(S)



Second Floor Plans - Sample Locations

Drawing Not to Scale

Adelaide ENVIRONMENTAL HEALTH
1511 Route 22
Brewster, NY 10509
Phone: (845) 278-7710
Fax: (845) 278-7750

CLIENT:
Greg Springer
Bergmann: Architects, Engineers, Planners
18 Corporate Woods Blvd., Suite 400
Albany, New York 12211

(Client) Project #

SURVEY LOCATION:
Yonkers Armory
2 Quincy Place
Yonkers, New York 10701

DATE: 6/13/2023

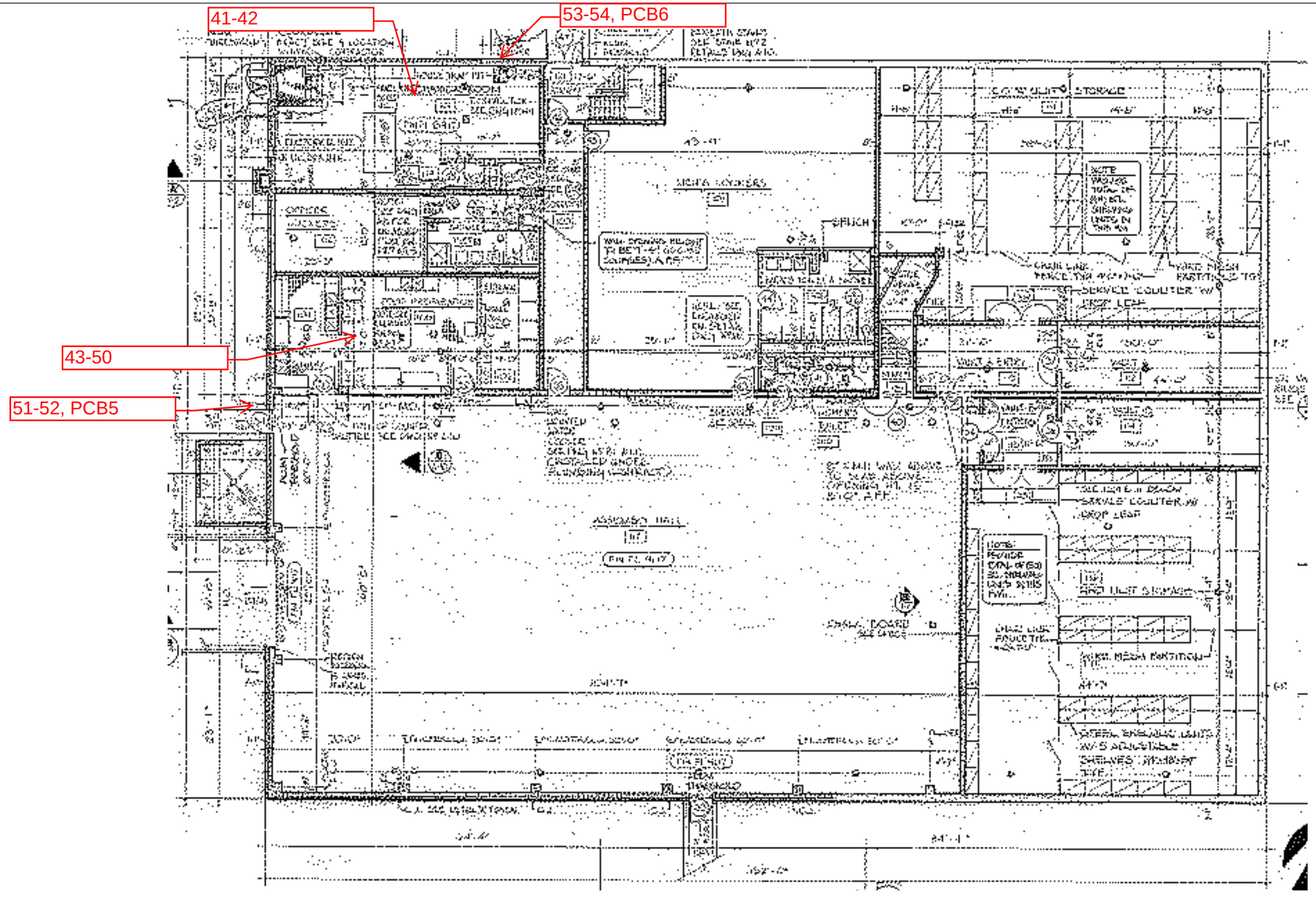
DRAWING VERSION: No. 1

ISSUED FOR:
Asbestos, Lead & PCB Survey

ADELAIDE PROJECT NO.:
BA:23168.00-IN

DRAWING PREPARED BY:
JPF

SL-01



First Floor Plans - Sample Locations

Drawing Not to Scale

Adelaide ENVIRONMENTAL HEALTH
1511 Route 22
Brewster, NY 10509
Phone: (845) 278-7710
Fax: (845) 278-7750

CLIENT:
Greg Springer
Bergmann: Architects, Engineers, Planners
18 Corporate Woods Blvd., Suite 400
Albany, New York 12211

(Client) Project #

SURVEY LOCATION:
Yonkers Armory
2 Quincy Place
Yonkers, New York 10701

DATE: 6/13/2023

DRAWING VERSION: No. 1

ISSUED FOR:
Asbestos, Lead & PCB Survey

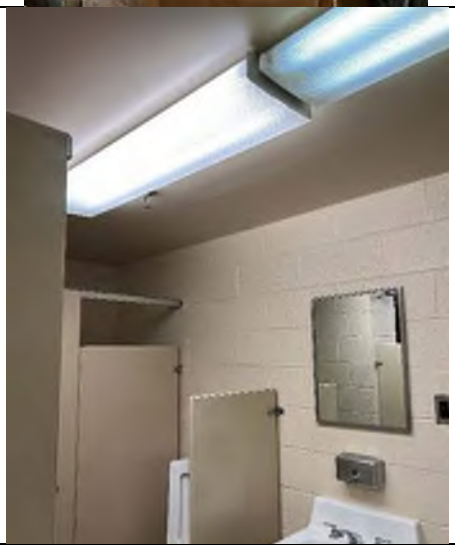
ADELAIDE PROJECT NO.:
BA:23168.00-IN

DRAWING PREPARED BY:
JPF

SL-02

APPENDIX C

ACM PHOTO(S)

PACM Electrical Wire Insulation and Panels	
PACM Electrical Wire Insulation and Panels	
PACM Mirror Mastic	

APPENDIX D

ASBESTOS ANALYTICAL RESULTS

Table I
Summary of Bulk Asbestos Analysis Results

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01	1	1	0.226	17.4	81.7	0.9	NAD	NAD
Location: 2nd Floor - Room 207 - 12 x 12 F.T. - Brown / Red Mottled								
02	2	1	0.195	16.3	82.6	1.0	NAD	NAD
Location: 2nd Floor - Room 207 - 12 x 12 F.T. - Brown / Red Mottled								
03	3	2	0.142	79.8	15.9	4.3	NAD	NAD
Location: 2nd Floor - Room 214 - 12 x 12 F.T. - Black Mastic								
04	4	2	0.157	80.5	13.2	6.3	NAD	NAD
Location: 2nd Floor - Room 214 - 12 x 12 F.T. - Black Mastic								
05	5	3	0.188	24.9	12.0	63.1	NAD	NAD
Location: 2nd Floor - Room 214 - 2 x 4 C.T. - Large + Small Holes								
06	6	3	0.132	26.0	22.1	51.9	NAD	NAD
Location: 2nd Floor - Room 214 - 2 x 4 C.T. - Large + Small Holes								
07	7	4	0.227	55.4	18.6	26.0	NAD	NAD
Location: 2nd Floor - Room 214 - Debris On Top Of C.T.								
08	8	5	0.137	27.2	25.5	47.3	NAD	NAD
Location: 2nd Floor - Room 214 - 2 x 4 C.T. - Squiggles + Holes								
09	9	5	0.159	28.1	21.5	50.4	NAD	NAD
Location: 2nd Floor - Room 214 - 2 x 4 C.T. - Squiggles + Holes								
10	10	6	----	----	----	----	NAD	NA
Location: 2nd Floor - Room 214 - CMU Mortar								
11	11	6	----	----	----	----	NAD	NA
Location: 2nd Floor - Room 214 - CMU Mortar								
12L1	12	7	0.222	62.5	37.0	0.5	NAD	NAD
Location: 2nd Floor - Room 202 - Cove Base - 4" Black								
12L2	12	7	0.222	45.9	49.1	5.0	NAD	NAD
Location: 2nd Floor - Room 202 - Cove Base - 4" Black Mastic								
13L1	13	7	0.212	62.4	37.1	0.5	NAD	NAD
Location: 2nd Floor - Room 202 - Cove Base - 4" Black								
13L2	13	7	0.282	45.7	46.4	7.9	NAD	NAD
Location: 2nd Floor - Room 202 - Cove Base - 4" Black Mastic								
14	14	8	0.234	57.9	4.8	37.4	NAD	NAD
Location: 2nd Floor - Room 202 - Yellow Carpet Mastic								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
15	15	8	0.161	57.4	24.3	18.3	NAD	NAD
Location: 2nd Floor - Room 202 - Yellow Carpet Mastic								
16	16	9	0.265	17.6	79.9	2.5	NAD	NAD
Location: 2nd Floor - Hallway - 12 x 12 F.T. - Green Mottled								
17	17	9	0.280	16.9	82.3	0.8	NAD	NAD
Location: 2nd Floor - Hallway - 12 x 12 F.T. - Green Mottled								
18	18	10	0.423	26.8	11.1	62.1	NAD	NAD
Location: 2nd Floor - Room 211 - Debris Above C.T.								
19	19	11	----	----	----	----	NAD	NA
Location: 2nd Floor - Hallway - Drywall Ceiling								
20	20	11	----	----	----	----	NAD	NA
Location: 2nd Floor - Hallway - Drywall Ceiling								
21	21	12	0.239	20.8	61.7	17.5	NAD	NAD
Location: 2nd Floor - Room 218 - 12 x 12 F.T. - Brown + White Mottled								
22	22	12	0.260	19.8	59.2	21.0	NAD	NAD
Location: 2nd Floor - Room 218 - 12 x 12 F.T. - Brown + White Mottled								
23	23	13	----	----	----	----	NAD	NA
Location: 2nd Floor - Hallway - Joint Compound								
24	24	13	----	----	----	----	NAD	NA
Location: 2nd Floor - Hallway - Joint Compound								
25	25	14	0.208	19.6	72.6	7.8	NAD	NAD
Location: 2nd Floor - Room 222 - 12 x 12 F.T. - White W/ Gray Specks								
26	26	14	0.244	20.7	60.9	18.5	NAD	NAD
Location: 2nd Floor - Room 222 - 12 x 12 F.T. - White W/ Gray Specks								
27	27	15	----	----	----	----	NAD	NA
Location: 2nd Floor - Rm. 223 - Womens Locker - Terrazzo Shower Base								
28	28	15	----	----	----	----	NAD	NA
Location: 2nd Floor - Rm. 223 - Womens Locker - Terrazzo Shower Base								
29	29	16	0.141	32.0	65.3	2.7	NAD	NAD
Location: 2nd Floor - Rm. 223 - Womens Locker - Sealant At Shower								
30	30	16	0.140	30.7	67.0	2.4	NAD	NAD
Location: 2nd Floor - Rm. 223 - Womens Locker - Sealant At Shower								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
31	31	17	0.217	29.3	67.7	3.0	NAD	NAD
Location: 2nd Floor - Entrance Doors - Glazing Compound								
32	32	17	0.237	29.2	67.2	3.6	NAD	NAD
Location: 2nd Floor - Entrance Doors - Glazing Compound								
33	33	18	0.187	44.1	53.5	2.4	NAD	NAD
Location: 2nd Floor - Entrance Doors - Exterior Sealant								
34	34	18	0.157	44.9	52.6	2.6	NAD	NAD
Location: 2nd Floor - Entrance Doors - Exterior Sealant								
35	35	19	----	----	----	----	NAD	NA
Location: 2nd Floor - Concrete								
36	36	19	----	----	----	----	NAD	NA
Location: 2nd Floor - Concrete								
37	37	20	----	----	----	----	NAD	NA
Location: 2nd Floor - Brick Mortar								
38	38	20	----	----	----	----	NAD	NA
Location: 2nd Floor - Brick Mortar								
39	39	21	0.171	65.1	26.9	8.0	NAD	NAD
Location: 2nd Floor - Exterior Vertical Sealant								
40	40	21	0.184	65.2	25.9	8.9	NAD	NAD
Location: 2nd Floor - Exterior Vertical Sealant								
41	41	22	0.124	72.9	11.4	15.7	NAD	NAD
Location: 1st Floor - Boiler Room - Pin Mastic On Duct								
42	42	22	0.182	73.9	8.4	17.7	NAD	NAD
Location: 1st Floor - Boiler Room - Pin Mastic On Duct								
43	43	23	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Wall Tile - Grout								
44	44	23	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Wall Tile - Grout								
45	45	24	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Wall Tile - Mudset								
46	46	24	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Wall Tile - Mudset								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
47	47	25	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Floor Tile - Grout								
48	48	25	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Floor Tile - Grout								
49	49	26	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Floor Tile - Mudset								
50	50	26	----	----	----	----	NAD	NA
Location: 1st Floor - Kitchen - Floor Tile - Mudset								
51	51	27	0.187	62.0	27.5	10.6	NAD	NAD
Location: 1st Floor - Exterior - Door Caulk								
52	52	27	0.206	64.6	22.3	13.1	NAD	NAD
Location: 1st Floor - Exterior - Door Caulk								
53	53	28	0.170	60.7	11.7	27.6	NAD	NAD
Location: 1st Floor - Exterior - Louver Caulk								
54	54	28	0.103	59.9	5.8	34.2	NAD	NAD
Location: 1st Floor - Exterior - Louver Caulk								

Analyzed by: Gabriella Morozov 

Date: 6/8/2023

Reviewed by: Gabriella Morozov 

**Quantitative Analysis (Semi/Full); Bulk Asbestos Analysis - PLM by Appd E to Subpt E, 40 CFR 763 or NYSDOH ELAP 198.1 for New York friable samples or NYSDOH ELAP 198.6 for New York NOB samples; TEM (Semi/Full) by EPA 600/R-93/116 (or NYSDOH ELAP 198.4; for New York samples). Analysis using Hitachi, Model H7000-Noran 7 System, Microscope, Serial #: 747-05-06. NAD = no asbestos detected during a quantitative analysis; NA = not analyzed; Trace = <1%; (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only; Qualitative Analysis: Asbestos analysis results of "Present" or "NVA = No Visible Asbestos" represents results for Qualitative PLM or TEM Analysis only (no accreditation coverage available from any regulatory agency for qualitative analyses): NVLAP (PLM) 200546-0, NYSDOH ELAP Lab 11480, NJ Lab ID #NY031.

Warning Note: PLM limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris for which PLM evaluation is recommended (i.e. soils and other heterogenous materials).

AmeriSci New York
117 EAST 30TH ST.
NEW YORK, NY 10016
TEL: (212) 679-8600 • FAX: (212) 679-3114

PLM Bulk Asbestos Report

Adelaide Environmental Health
Attn: John Soter
1511 Rte. 22, Suite C24

Brewster, NY 10509

Date Received 06/07/23
Date Examined 06/08/23
ELAP # 11480

AmeriSci Job # 223061619
P.O. #
Page 1 **of** 10

RE: OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1	223061619-01	***No***	NAD
1	**Location:** 2nd Floor - Room 207 - 12 x 12 F.T. - Brown / Red Mottled		(by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Brown/Red, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.9%			
2	223061619-02	***No***	NAD
1	**Location:** 2nd Floor - Room 207 - 12 x 12 F.T. - Brown / Red Mottled		(by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Brown/Red, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 1%			
3	223061619-03	***No***	NAD
2	**Location:** 2nd Floor - Room 214 - 12 x 12 F.T. - Black Mastic		(by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 4.3%			
4	223061619-04	***No***	NAD
2	**Location:** 2nd Floor - Room 214 - 12 x 12 F.T. - Black Mastic		(by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 6.3%			
5	223061619-05	***No***	NAD
3	**Location:** 2nd Floor - Room 214 - 2 x 4 C.T. - Large + Small Holes		(by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 63.1%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
6 3	223061619-06 **Location:** 2nd Floor - Room 214 - 2 x 4 C.T. - Large + Small Holes	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 51.9%			
7 4	223061619-07 **Location:** 2nd Floor - Room 214 - Debris On Top Of C.T.	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Black, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 26%			
8 5	223061619-08 **Location:** 2nd Floor - Room 214 - 2 x 4 C.T. - Squiggles + Holes	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 47.3%			
9 5	223061619-09 **Location:** 2nd Floor - Room 214 - 2 x 4 C.T. - Squiggles + Holes	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 50.4%			
10 6	223061619-10 **Location:** 2nd Floor - Room 214 - CMU Mortar	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
11 6	223061619-11 **Location:** 2nd Floor - Room 214 - CMU Mortar	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
12 7	223061619-12L1 **Location:** 2nd Floor - Room 202 - Cove Base - 4" Black	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.5%			
12 7	223061619-12L2 **Location:** 2nd Floor - Room 202 - Cove Base - 4" Black Mastic	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Cream, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 5%			
13 7	223061619-13L1 **Location:** 2nd Floor - Room 202 - Cove Base - 4" Black	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.5%			
13 7	223061619-13L2 **Location:** 2nd Floor - Room 202 - Cove Base - 4" Black Mastic	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Cream, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 7.9%			
14 8	223061619-14 **Location:** 2nd Floor - Room 202 - Yellow Carpet Mastic	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 37.4%			
15 8	223061619-15 **Location:** 2nd Floor - Room 202 - Yellow Carpet Mastic	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 18.3%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
16 9	223061619-16 **Location:** 2nd Floor - Hallway - 12 x 12 F.T. - Green Mottled	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Green, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 2.5%			
17 9	223061619-17 **Location:** 2nd Floor - Hallway - 12 x 12 F.T. - Green Mottled	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Green, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.8%			
18 10	223061619-18 **Location:** 2nd Floor - Room 211 - Debris Above C.T.	***No***	NAD [1] (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Black, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 62.1%			
19 11	223061619-19 **Location:** 2nd Floor - Hallway - Drywall Ceiling	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray/Brown, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 15%, Non-fibrous 85%			
20 11	223061619-20 **Location:** 2nd Floor - Hallway - Drywall Ceiling	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray/Brown, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 15%, Non-fibrous 85%			
21 12	223061619-21 **Location:** 2nd Floor - Room 218 - 12 x 12 F.T. - Brown + White Mottled	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 17.5%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
22 12	223061619-22 **Location:** 2nd Floor - Room 218 - 12 x 12 F.T. - Brown + White Mottled	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 21%			
23 13	223061619-23 **Location:** 2nd Floor - Hallway - Joint Compound	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
24 13	223061619-24 **Location:** 2nd Floor - Hallway - Joint Compound	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
25 14	223061619-25 **Location:** 2nd Floor - Room 222 - 12 x 12 F.T. - White W/ Gray Specks	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 7.8%			
26 14	223061619-26 **Location:** 2nd Floor - Room 222 - 12 x 12 F.T. - White W/ Gray Specks	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 18.5%			
27 15	223061619-27 **Location:** 2nd Floor - Rm. 223 - Womens Locker - Terrazzo Shower Base	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: White/Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
28 15	223061619-28 **Location:** 2nd Floor - Rm. 223 - Womens Locker - Terrazzo Shower Base	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: White/Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
29 16	223061619-29 **Location:** 2nd Floor - Rm. 223 - Womens Locker - Sealant At Shower	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 2.7%			
30 16	223061619-30 **Location:** 2nd Floor - Rm. 223 - Womens Locker - Sealant At Shower	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 2.4%			
31 17	223061619-31 **Location:** 2nd Floor - Entrance Doors - Glazing Compound	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 3%			
32 17	223061619-32 **Location:** 2nd Floor - Entrance Doors - Glazing Compound	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 3.6%			
33 18	223061619-33 **Location:** 2nd Floor - Entrance Doors - Exterior Sealant	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 2.4%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
34 18	223061619-34 **Location:** 2nd Floor - Entrance Doors - Exterior Sealant	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 2.6%			
35 19	223061619-35 **Location:** 2nd Floor - Concrete	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
36 19	223061619-36 **Location:** 2nd Floor - Concrete	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
37 20	223061619-37 **Location:** 2nd Floor - Brick Mortar	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
38 20	223061619-38 **Location:** 2nd Floor - Brick Mortar	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
39 21	223061619-39 **Location:** 2nd Floor - Exterior Vertical Sealant	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 8%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
40 21	223061619-40 **Location:** 2nd Floor - Exterior Vertical Sealant	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 8.9%			
41 22	223061619-41 **Location:** 1st Floor - Boiler Room - Pin Mastic On Duct	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 15.7%			
42 22	223061619-42 **Location:** 1st Floor - Boiler Room - Pin Mastic On Duct	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 17.7%			
43 23	223061619-43 **Location:** 1st Floor - Kitchen - Wall Tile - Grout	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
44 23	223061619-44 **Location:** 1st Floor - Kitchen - Wall Tile - Grout	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
45 24	223061619-45 **Location:** 1st Floor - Kitchen - Wall Tile - Mudset	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
46 24	223061619-46 **Location:** 1st Floor - Kitchen - Wall Tile - Mudset	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
47 25	223061619-47 **Location:** 1st Floor - Kitchen - Floor Tile - Grout	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
48 25	223061619-48 **Location:** 1st Floor - Kitchen - Floor Tile - Grout	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
49 26	223061619-49 **Location:** 1st Floor - Kitchen - Floor Tile - Mudset	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
50 26	223061619-50 **Location:** 1st Floor - Kitchen - Floor Tile - Mudset	***No***	NAD (by NYS ELAP 198.1) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100%			
51 27	223061619-51 **Location:** 1st Floor - Exterior - Door Caulk	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 10.6%			

See Reporting notes on last page

PLM Bulk Asbestos Report

OGSX:23168.00-IN; Yonkers Armory; 2 Quincy Place, Yonkers, New York 10701

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
52 27	223061619-52 **Location:** 1st Floor - Exterior - Door Caulk	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: Gray, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 13.1%			
53 28	223061619-53 **Location:** 1st Floor - Exterior - Louver Caulk	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 27.6%			
54 28	223061619-54 **Location:** 1st Floor - Exterior - Louver Caulk	***No***	NAD (by NYS ELAP 198.6) by Kensen Caro on 06/08/23
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 34.2%			

Reporting Notes:

(1) Analysis Results For Soil, Dust, Or Debris May Be Highly Variable Because Of The Heterogeneous Nature Of These Samples

Analyzed by: Kensen Caro
Date: 6/8/2023

Reviewed by: Gabriella Morozov

*NAD/NSD =no asbestos detected; NA =not analyzed; NA/PS=not analyzed/positive stop, (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; PLM Bulk Asbestos Analysis using Motic, Model BA310 Pol Scope, Microscope, Serial #: 1190000538, by Appd E to Subpt E, 40 CFR 763 quantified by either CVES or 400 pt ct as noted for each analysis (NVLAP 200546-0), ELAP PLM Method 198.1 for NY friable samples, which includes the identification and quantitation of vermiculite, or ELAP 198.6 for NOB samples, or EPA 400 pt ct by EPA 600-M4-82-020 (NY ELAP Lab 11480); Note:PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab.This PLM report relates ONLY to the items tested. RI Cert AAL-094, CT Cert PH-0186, Mass Cert AA000054, NJ Lab ID #NY031.

_____END OF REPORT_____

Adelaide Environmental Health Associates, Inc
1454 Rte. 22, Suite B202
Brewster, NY 10509
845-278-7710
845-278-7750 - fax

Site Address: Yonkers Armory	Date: 6/6/2023	Inspector: Jason Fullum
2 Quincy Place	Client Project #	
Yonkers, New York 10701	Project #: OGSX:23168.00-IN	

Sample ID #	Homogeneous Area	Floor Level	Sample Location/Description	Quantity (In Feet)	Friable Non Friable	Condition g, d, sd
1	1	2	Room 207 - 12x12 F.T. - Brown Red Mottled	980SF	NF	G
2	1	2				
3	2	2	Room 214 - - Black Mastic			
4	2	2				
5	3	2	- 2x4 C.T. - Large + Small Holes		NF	
6	3	2				
7	4	2	- Debris on Top of C.T.			SD
8	5	2	- 2x4 C.T. - Scissles + Holes			G
9	5	2				
10	6	2	- CMU Mortar			
11	6	2				
12	7	2	Room 202 - Coveblase - 4" Black + Mastic			
13	7	2				

Special Instructions/ Turnaround Time: 223061619

Stop at 1st Positive per Homogenous Area ***24 HR TAT***
Fax Results to 845-278-7750
E-Mail results to AdelaideLabResults@Adelaidellc.com and Jfullum@adelaidellc.com

Relinquished by:
Received by: Alexandra Vargas 6-7-23 1030
Relinquished by:
Received by:

Adelaide Environmental Health Associates, Inc
1454 Rte. 22, Suite B202
Brewster, NY 10509
845-278-7710
845-278-7750 - fax

Site Address: Yonkers Armory	Date: 6/6/2023	Inspector: Jason Fullum
2 Quincy Place	Client Project #	
Yonkers, New York 10701	Project #: OGSX:23168.00-IN	

Sample ID #	Homogeneous Area	Floor Level	Sample Location/Description	Quantity (In Feet)	Friable Non Friable	Condition g, d, sd
14	8	2	Room 202 - Yellow Carpet Mastic		NF	G
15	8	2	↓ ↓		↓	↓
16	9	2	Hallway - 12x12 F.T. - Green Mottled			
17	9	2	↓ ↓ ↓			
18	10	2	Room 211 - Debris above C.T.		F	SD
19	10	2	Hallway - Drywall Ceiling		F	G
20	11	2	↓ ↓		F	
21	12	2	Room 218 - 12x12 F.T. - Brown + White Mottled		NF	
22	12	2	↓ ↓ ↓		↓	
23	13	2	Hallway - Joint Compound		F	
24	13	2	↓ ↓		F	
25	14	2	Room 222 - 12x12 F.T. - White w/ Gray Specks		NF	
26	14	2	↓ ↓		↓	↓

Special Instructions/ Turnaround Time: 23061619

Stop at 1st Positive per Homogenous Area ***24 HR TAT***
Fax Results to 845-278-7750
E-Mail results to AdelaideLabResults@Adelaidellc.com and Jfullum@adelaidellc.com

Relinquished by:
Received by: Alexandra Vaccaro 6/23 1030
Relinquished by:
Received by:

Adelaide Environmental Health Associates, Inc
1454 Rte. 22, Suite B202
Brewster, NY 10509
845-278-7710
845-278-7750 - fax

Site Address: Yonkers Armory	Date: 6/6/2023	Inspector: Jason Fullum
2 Quincy Place	Client Project #	
Yonkers, New York 10701	Project #: OGSX:23168.00-IN	

Sample ID #	Homogeneous Area	Floor Level	Sample Location/Description	Quantity (In Feet)	Friable Non Friable	Condition g, d, sd
27	15	2	Rm. 223 - Women locker - Terrazzo Shower Pan		NF	D
28	15	2				D
29	16	2	- Sealant at Shower			D
30	16	2				D
31	17	2	Entrance Doors - Door Glazing Compound		NF	
32	17	2				
33	18	2	- Exterior Sealant			
34	18	2				
35	19	2	Concrete			
36	19	2				
37	20	2	Brick Mortar			
38	20	2				
39	21	2	Exterior Vertical Sealant			
40	21	2				

Special Instructions/ Turnaround Time: 223061619

Stop at 1st Positive per Homogenous Area ***24 HR TAT***
Fax Results to 845-278-7750
E-Mail results to AdelaideLabResults@Adelaidellc.com and Jfullum@adelaidellc.com

Relinquished by:
Received by: Alexandra Vuic 6/7/23 1030
Relinquished by:
Received by:

Adelaide Environmental Health Associates, Inc
1454 Rte. 22, Suite B202
Brewster, NY 10509
845-278-7710
845-278-7750 - fax

Site Address: Yonkers Armory	Date: 6/6/2023	Inspector: Jason Fullum
2 Quincy Place	Client Project #	
Yonkers, New York 10701	Project #: OGSX:23168.00-IN	

Sample ID #	Homogeneous Area	Floor Level	Sample Location/Description	Quantity (In Feet)	Friable Non Friable	Condition g, d, sd
41	22	1	Boiler Room - Pipe Mastic on Duct		NF	D
42	22	1				D
43	23	1	Kitchen - Wall Tile - Grout			
44	23	1				
45	24	1	- Mudset			
46	24	1				
47	25	1	- Floor Tile - Grout			
48	25	1				
49	26	1	- Mudset			
50	26	1				
51	27	1	Exterior - Door Caulk			
52	27	1				
53	28	1	- Louver Caulk			
54	28	1				

Special Instructions/ Turnaround Time: 223061619

Stop at 1st Positive per Homogenous Area ***24 HR TAT***
Fax Results to 845-278-7750
E-Mail results to AdelaideLabResults@Adelaidellc.com and Jfullum@adelaidellc.com

Relinquished by:
Received by: Alexandra Vian 6/23 1030
Relinquished by:
Received by:

APPENDIX E

XRF READINGS

Adelaide Environmental Heath Associates Inc.
1511 Route 22, Suite C-24
Brewster, New York 10509
Adelaide Project# BA:23168.00-IN
Project Name: Yonkers Armory
Inspector: Jason Fullum

Reading #	Date	Time	Space Type	Floor	Room	Component	Side	Substrate	Color	Condition	Lead Concentration (mg/cm2)	Result
1	6/6/2023	9:04:22	Armory		Calibration						0.9	Negative
2	6/6/2023	9:04:34	Armory		Calibration						0.9	Negative
3	6/6/2023	9:04:46	Armory		Calibration						0.9	Negative
4	6/6/2023	9:23:29	Armory	2nd Floor	207	Wall	A	CMU	Beige	Intact	-0.2	Negative
5	6/6/2023	9:24:00	Armory	2nd Floor	207	Door Case	A	Metal	Black	Intact	0.4	Negative
6	6/6/2023	9:24:27	Armory	2nd Floor	207	Door	A	Metal	Red	Intact	0.1	Negative
7	6/6/2023	9:25:07	Armory	2nd Floor	201	Door	A	Metal	Red	Intact	0	Negative
8	6/6/2023	9:25:31	Armory	2nd Floor	201	Door Case	A	Metal	Black	Intact	0.5	Negative
9	6/6/2023	9:25:58	Armory	2nd Floor	201	Wall	B	CMU	Black	Intact	-0.2	Negative
10	6/6/2023	10:29:25	Armory	2nd Floor	Hallway	Wall	B	CMU	Beige	Intact	-0.3	Negative
11	6/6/2023	10:30:21	Armory	2nd Floor	Hallway	Ceiling	Ceiling	Sheetrock	Beige	Intact	0.1	Negative
12	6/6/2023	11:18:54	Armory	2nd Floor	Hallway	Stair Handrail	A	Metal	Red	Intact	0.1	Negative
13	6/6/2023	11:19:20	Armory	2nd Floor	Hallway	Stair Stringer	A	Metal	Red	Intact	0.1	Negative
14	6/6/2023	11:19:35	Armory	2nd Floor	Hallway	Stair Riser	A	Metal	Red	Intact	0.2	Negative
15	6/6/2023	11:21:42	Armory	2nd Floor	Hallway	Ceiling	Ceiling	Sheetrock	Off White	Intact	0.1	Negative
16	6/6/2023	11:28:51	Armory	2nd Floor	Bathroom	Floor	Floor	Concrete	Grey	Intact	0	Negative
17	6/6/2023	11:30:19	Armory	2nd Floor	Bathroom	Floor	Floor	Concrete	Red	Intact	0	Negative
18	6/6/2023	11:30:37	Armory	2nd Floor	Bathroom	Floor	Floor	Concrete	Yellow	Intact	0	Negative
19	6/6/2023	11:31:02	Armory	2nd Floor	Bathroom	Wall	A	CMU	Yellow	Intact	-0.2	Negative
20	6/6/2023	11:31:26	Armory	2nd Floor	Bathroom	Ceiling	Ceiling	Sheetrock	Yellow	Intact	-0.2	Negative
21	6/6/2023	11:41:55	Armory	2nd Floor	223	Wall	D	CMU	Off White	Intact	-0.1	Negative
22	6/6/2023	11:42:25	Armory	2nd Floor	223	Door	A	Metal	Red	Intact	0	Negative
23	6/6/2023	11:42:48	Armory	2nd Floor	223	Door Case	A	Metal	Black	Intact	0.4	Negative
24	6/6/2023	11:43:21	Armory	2nd Floor	223	Floor	Floor	Concrete	Red	Intact	0	Negative
25	6/6/2023	11:43:50	Armory	2nd Floor	223	Wall	B	CMU	Yellow	Intact	-0.3	Negative
26	6/6/2023	11:45:02	Armory	2nd Floor	223	Ceiling	Ceiling	Sheetrock	Yellow	Intact	0	Negative
27	6/6/2023	13:30:04	Armory	1st Floor	Bathroom	Floor	Floor	Concrete	Green	Intact	0.2	Negative
28	6/6/2023	13:30:37	Armory	1st Floor	Bathroom	Wall	A	CMU	Beige	Intact	-0.1	Negative
29	6/6/2023	13:31:07	Armory	1st Floor	Bathroom	Ceiling	Ceiling	Sheetrock	Beige	Intact	-0.2	Negative
30	6/6/2023	13:33:44	Armory	1st Floor	Exterior	roll up door rail	C	Metal	Green	Intact	0	Negative
31	6/6/2023	13:34:32	Armory	1st Floor	Exterior	Door	C	Metal	Green	Intact	0.1	Negative
32	6/6/2023	13:34:50	Armory	1st Floor	Exterior	Exterior Door	C	Metal	Green	Intact	-0.1	Negative
33	6/6/2023	13:35:08	Armory	1st Floor	Exterior	Exterior Door Case	C	Metal	Green	Intact	0.4	Negative
34	6/6/2023	14:01:04	Armory	1st Floor	Exterior	Window Case	B	Metal	Green	Intact	0	Negative
35	6/6/2023	14:05:06	Armory		Calibration						0.9	Negative
36	6/6/2023	14:05:18	Armory		Calibration						1	Positive
37	6/6/2023	14:05:30	Armory		Calibration						1	Positive

APPENDIX F

PCB ANALYTICAL RESULTS

PHOENIX
Environmental Laboratories, Inc.

Thursday, June 15, 2023

Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Project ID: YONKERS ARMORY 23168.00
SDG ID: GCO21952
Sample ID#s: CO21952 - CO21957

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Sample Id Cross Reference

June 15, 2023

SDG I.D.: GCO21952

Project ID: YONKERS ARMORY 23168.00

Client Id	Lab Id	Matrix
PCB1-WOMENS SHOWER	CO21952	BULK
PCB2-GLAZING	CO21953	CAULK
PCB3-EXT. DOOR CAULK	CO21954	CAULK
PCB4-EXT. SEALANT	CO21955	CAULK
PCB5- EXT. DOOR CAULK	CO21956	CAULK
PCB 6-LOUVER CAULK	CO21957	CAULK

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

June 15, 2023

FOR: Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Sample Information		Custody Information		Date	Time
Matrix:	BULK	Collected by:		06/06/23	
Location Code:	ADELAIDE	Received by:	MMN	06/07/23	17:16
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCO21952
Phoenix ID: CO21952

Project ID: YONKERS ARMORY 23168.00
Client ID: PCB1-WOMENS SHOWER

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for PCB	Completed				06/08/23	R/AW/SB/I	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1221	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1232	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1242	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1248	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1254	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1260	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1262	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1268	ND	2900	ug/Kg	1	06/09/23	SC	SW8082A
QA/QC Surrogates							
% DCBP	55		%	1	06/09/23	SC	30 - 150 %
% DCBP (Confirmation)	40		%	1	06/09/23	SC	30 - 150 %
% TCMX	52		%	1	06/09/23	SC	30 - 150 %
% TCMX (Confirmation)	47		%	1	06/09/23	SC	30 - 150 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

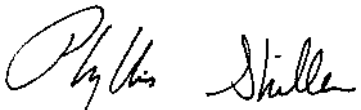
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
Due to limited sample an elevated RL was reported.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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Phyllis Shiller, Laboratory Director
June 15, 2023
Reviewed and Released by: Rashmi Makol, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH NY #11301

Analysis Report

June 15, 2023

FOR: Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Sample Information		Custody Information		Date	Time
Matrix:	CAULK	Collected by:		06/06/23	
Location Code:	ADELAIDE	Received by:	MMN	06/07/23	17:16
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCO21952
Phoenix ID: CO21953

Project ID: YONKERS ARMORY 23168.00
Client ID: PCB2-GLAZING

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				06/08/23	R/AW/SB/I	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1221	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1232	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1242	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1248	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1254	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1260	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1262	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1268	ND	930	ug/Kg	1	06/09/23	SC	SW8082A
QA/QC Surrogates							
% DCBP	54		%	1	06/09/23	SC	30 - 150 %
% DCBP (Confirmation)	52		%	1	06/09/23	SC	30 - 150 %
% TCMX	57		%	1	06/09/23	SC	30 - 150 %
% TCMX (Confirmation)	55		%	1	06/09/23	SC	30 - 150 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

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Phyllis Shiller, Laboratory Director
June 15, 2023
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

Analysis Report

June 15, 2023

FOR: Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Sample Information		Custody Information		Date	Time
Matrix:	CAULK	Collected by:		06/06/23	
Location Code:	ADELAIDE	Received by:	MMN	06/07/23	17:16
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCO21952
Phoenix ID: CO21954

Project ID: YONKERS ARMORY 23168.00
Client ID: PCB3-EXT. DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				06/08/23	R/AW/SB/I	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1221	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1232	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1242	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1248	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1254	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1260	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1262	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1268	ND	880	ug/Kg	1	06/09/23	SC	SW8082A
QA/QC Surrogates							
% DCBP	39		%	1	06/09/23	SC	30 - 150 %
% DCBP (Confirmation)	34		%	1	06/09/23	SC	30 - 150 %
% TCMX	31		%	1	06/09/23	SC	30 - 150 %
% TCMX (Confirmation)	31		%	1	06/09/23	SC	30 - 150 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

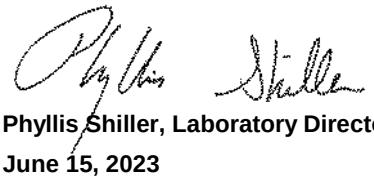
RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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Phyllis Shiller, Laboratory Director
June 15, 2023
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

Analysis Report

June 15, 2023

FOR: Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Sample Information		Custody Information		Date	Time
Matrix:	CAULK	Collected by:		06/06/23	
Location Code:	ADELAIDE	Received by:	MMN	06/07/23	17:16
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCO21952
Phoenix ID: CO21955

Project ID: YONKERS ARMORY 23168.00
Client ID: PCB4-EXT. SEALANT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				06/08/23	R/AW/SB/I	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1221	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1232	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1242	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1248	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1254	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1260	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1262	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1268	ND	960	ug/Kg	1	06/09/23	SC	SW8082A
QA/QC Surrogates							
% DCBP	41		%	1	06/09/23	SC	30 - 150 %
% DCBP (Confirmation)	35		%	1	06/09/23	SC	30 - 150 %
% TCMX	36		%	1	06/09/23	SC	30 - 150 %
% TCMX (Confirmation)	36		%	1	06/09/23	SC	30 - 150 %

Project ID: YONKERS ARMORY 23168.00 Phoenix I.D.: CO21955

Client ID: PCB4-EXT. SEALANT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

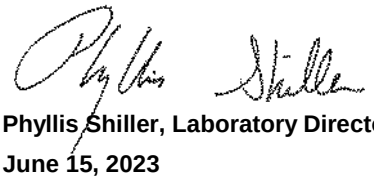
RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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Phyllis Shiller, Laboratory Director

June 15, 2023

Reviewed and Released by: Rashmi Makol, Project Manager

PHOENIX

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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

June 15, 2023

FOR: Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Sample Information		Custody Information		Date	Time
Matrix:	CAULK	Collected by:		06/06/23	
Location Code:	ADELAIDE	Received by:	MMN	06/07/23	17:16
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCO21952
Phoenix ID: CO21956

Project ID: YONKERS ARMORY 23168.00
Client ID: PCB5- EXT. DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				06/08/23	R/AW/SB/I	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1221	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1232	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1242	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1248	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1254	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1260	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1262	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
PCB-1268	ND	600	ug/Kg	1	06/09/23	SC	SW8082A
QA/QC Surrogates							
% DCBP	43		%	1	06/09/23	SC	30 - 150 %
% DCBP (Confirmation)	36		%	1	06/09/23	SC	30 - 150 %
% TCMX	39		%	1	06/09/23	SC	30 - 150 %
% TCMX (Confirmation)	38		%	1	06/09/23	SC	30 - 150 %

Project ID: YONKERS ARMORY 23168.00 Phoenix I.D.: CO21956

Client ID: PCB5- EXT. DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

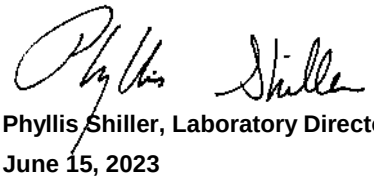
RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

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Phyllis Shiller, Laboratory Director

June 15, 2023

Reviewed and Released by: Rashmi Makol, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
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ACCREDITED IN ACCORDANCE WITH NY #11301

Analysis Report

June 15, 2023

FOR: Attn: Stephanie Soter
Adelaide Environmental Health Assoc,Inc
1511 Route 22, Suite C24
Brewster, NY 10509

Sample Information		Custody Information		Date	Time
Matrix:	CAULK	Collected by:		06/06/23	
Location Code:	ADELAIDE	Received by:	MMN	06/07/23	17:16
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCO21952
Phoenix ID: CO21957

Project ID: YONKERS ARMORY 23168.00
Client ID: PCB 6-LOUVER CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference	
Caulk Extraction for PCB	Completed				06/12/23	Q/AC1	SW3540C	
PCB (Soxhlet SW3540C)								
PCB-1016	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1221	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1232	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1242	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1248	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1254	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1260	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1262	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
PCB-1268	ND	940	ug/Kg	1	06/13/23	SC	SW8082A	
QA/QC Surrogates								
% DCBP	17		%	1	06/13/23	SC	30 - 150 %	3
% DCBP (Confirmation)	17		%	1	06/13/23	SC	30 - 150 %	3
% TCMX	17		%	1	06/13/23	SC	30 - 150 %	3
% TCMX (Confirmation)	17		%	1	06/13/23	SC	30 - 150 %	3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

3 = This parameter exceeds laboratory specified limits.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

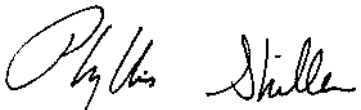
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
Poor surrogate recovery was observed for PCBs. Sample was re-extracted with similar results.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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Phyllis Shiller, Laboratory Director
June 15, 2023
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

NY # 11301

QA/QC Report

June 15, 2023

QA/QC Data

SDG I.D.: GCO21952

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 681421 (ug/Kg), QC Sample No: CO21956 10X (CO21952, CO21953, CO21954, CO21955, CO21956)										
Polychlorinated Biphenyls - Bulk										
PCB-1016	ND	170	99	91	8.4				40 - 140	30
PCB-1221	ND	170							40 - 140	30
PCB-1232	ND	170							40 - 140	30
PCB-1242	ND	170							40 - 140	30
PCB-1248	ND	170							40 - 140	30
PCB-1254	ND	170							40 - 140	30
PCB-1260	ND	170	106	107	0.9				40 - 140	30
PCB-1262	ND	170							40 - 140	30
PCB-1268	ND	170							40 - 140	30
% DCBP (Surrogate Rec)	107	%	111	106	4.6				30 - 150	30
% DCBP (Surrogate Rec) (Confirm	102	%	101	102	1.0				30 - 150	30
% TCMX (Surrogate Rec)	89	%	95	87	8.8				30 - 150	30
% TCMX (Surrogate Rec) (Confirm	82	%	89	82	8.2				30 - 150	30
Comment:										
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.										
QA/QC Batch 681903 (ug/Kg), QC Sample No: CO21957 10X (CO21957)										
Polychlorinated Biphenyls										
PCB-1016	ND	170	101	105	3.9				40 - 140	30
PCB-1221	ND	170							40 - 140	30
PCB-1232	ND	170							40 - 140	30
PCB-1242	ND	170							40 - 140	30
PCB-1248	ND	170							40 - 140	30
PCB-1254	ND	170							40 - 140	30
PCB-1260	ND	170	115	121	5.1				40 - 140	30
PCB-1262	ND	170							40 - 140	30
PCB-1268	ND	170							40 - 140	30
% DCBP (Surrogate Rec)	104	%	100	109	8.6				30 - 150	30
% DCBP (Surrogate Rec) (Confirm	109	%	103	111	7.5				30 - 150	30
% TCMX (Surrogate Rec)	99	%	95	103	8.1				30 - 150	30
% TCMX (Surrogate Rec) (Confirm	98	%	95	102	7.1				30 - 150	30
Comment:										
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.										

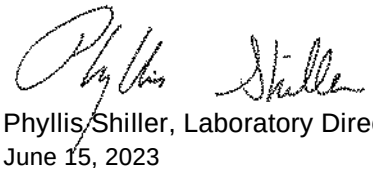
QA/QC Data

SDG I.D.: GCO21952

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference



Phyllis Shiller, Laboratory Director
June 15, 2023

Thursday, June 15, 2023

Criteria: None

State: NY

Sample Criteria Exceedances Report

GCO21952 - ADELAIDE

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
CO21952	$PCB_SOXR	PCB-1268	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1262	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1260	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1254	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1248	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1242	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1232	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1221	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg
CO21952	$PCB_SOXR	PCB-1016	NY / Requested PCB RL /	ND	2900	1000	1000	ug/Kg

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

Analysis Comments

June 15, 2023 SDG I.D.: GCO21952

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report:

PCB Narration

AU-ECD5 06/13/23-1: CO21957

The following Continuing Calibration compounds did not meet % deviation criteria:
Samples: CO21957
Preceding CC 613B016 - None.
Succeeding CC 613B029 - DCBP SURR 23%L (15%)

Environmental Laboratories, Inc.
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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

NY Temperature Narration

June 15, 2023

SDG I.D.: GCO21952

The samples in this delivery group were received at 1.1°C.
(Note acceptance criteria for relevant matrices is above freezing up to 6°C)

Cooler: Yes ☐ No ☐
Coolant: IPK ☐ ICE ☐ No ☐
Temp ____ °C Pg ____ of ____

NY/NJ/PA CHAIN OF CUSTODY RECORD

PHOENIX Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: Makrina Nolan, makrina@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-1102

Contact Options:
☐ Phone:
☐ Fax:
☐ Email:

Customer: Adelaide
Address: 1511 Rte 22, Ste C24
Somerset, NJ 10505

Project: Yankee Armory 23168.00
Report to:
Invoice to:
QUOTE # :

Project P.O:

This section MUST be completed with Bottle Quantities.

Sampler's Signature: _____ Date: 6/6/23

Client Sample - Information / Identification

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe
OIL=Oil B=Bulk L=Liquid

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	*MS/MSD (May be billable at analysis unit rate)	PCB's	BAS	GL Amber 8 oz. [ ] wt H_3PO_4 [ ] $NaHSO_4$	Soil VOA Vials [ ] methanol [ ] H_2O	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] H_2SO_4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H_2SO_4 [ ] 250ml [ ] 500ml [ ] 1000ml	PL NaOH 250ml	PL HNO_3 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
21952	PCB1-Women Shower		6/6/23			X	1											
21953	PCB2-Glazing Compd		6/6/23			X	1											
21954	PCB3-Ext. Door Caulk		6/6/23			X	1											
21955	PCB4-Ext. Vert. Sealant		6/6/23			X	1											
21956	PCB5-Ext. Door Caulk		6/6/23			X	1											
21957	PCB6-Louver Caulk		6/6/23			X	1											

Relinquished by:	Accepted by:	Date:	Time:
		6.7.23	1000
		6-7-23	15:45
		6/7/23	17:16

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☐ 4 Days*
☐ 5 Days*
☐ Standard
* SURCHARGE APPLIES
7 DAYS

NJ
☐ Res. Criteria
☐ Non-Res. Criteria
☐ Impact to GW Soil Cleanup Criteria
☐ Impact to GW soil screen Criteria
☐ GW Criteria

NY
☐ TOGS GW
☐ CP-51 SOIL
☐ 375SCO Unrestricted Soil
☐ 375SCO Residential Soil
☐ 375SCO Residential Restricted Soil
☐ 375SCO Commercial Soil
☐ 375SCO Industrial Soil
☐ Subpart 5 DW

PA
☐ Clean Fill Limits
☐ PA-GW
☐ Reg Fill Limits
☐ PA Soil Restricted
☐ PA Soil non-restricted

State Samples Collected?
NY

Data Package:
☐ NJ Reduced Deliv. *
☐ NY Enhanced (ASP B) *
☐ Other

Comments, Special Requirements or Regulations:

Data Format:
☐ Phoenix Std Report ☐ EQuIS
☐ Excel ☐ NJ Hazsite EDD
☐ PDF ☐ NY EZ EDD (ASP)
☐ GIS/Key ☐ Other

*MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.

APPENDIX G

PERSONNEL AND LABORATORY CERTIFICATIONS

WE ARE YOUR DOL

NEW YORK STATE | Department of Labor

DIVISION OF SAFETY & HEALTH LICENSE AND CERTIFICATE UNIT, STATE OFFICE CAMPUS, BLDG. 12, ALBANY, NY 12226

ASBESTOS HANDLING LICENSE

Adelaide Environmental Health Associates, Inc.
1511 Route 22, Suite C24, Brewster, NY, 10509

License Number: 29305
License Class: RESTRICTED
Date of Issue: 06/07/2023
Expiration Date: 07/31/2024
Duly Authorized Representative: John Soter

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director
For the Commissioner of Labor

United States Environmental Protection Agency

This is to certify that

ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires September 08, 2025

LBP-15081-2

Certification #

August 25, 2022

Issued On

Michelle Price, Chief

Lead, Heavy Metals, and Inorganics Branch

United States Environmental Protection Agency

This is to certify that

Adelaide Environmental Health Associates, Inc

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint renovation, repair, and painting activities pursuant to 40 CFR Part 745.89

In the Jurisdiction of:

All EPA Administered States, Tribes, and Territories

This certification is valid from the date of issuance and expires December 05, 2027

NAT-15081-3

Certification #

August 03, 2022

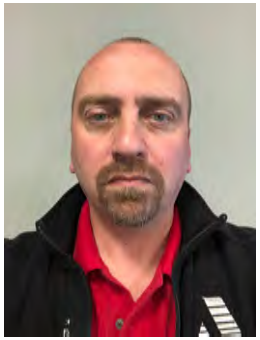
Issued On

Michelle Price, Chief

Lead, Heavy Metals, and Inorganics Branch

United States Environmental Protection Agency

This is to certify that



Jason P Fullum

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Risk Assessor

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires July 11, 2023

LBP-R-12098-2

Certification #

May 07, 2020

Issued On

Susan Schulz, Acting Chief

Chemicals and Multimedia Programs Branch

STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE

N.Y.S



JASON P FULLUM
CLASS(EXPIRES)
C ATEC(02/24) D INSP(02/24)
E MGPL(02/24) H PM (02/24)
I PD (02/24)

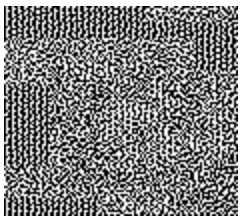
CERT# 97-20574
DMV# 375065936

MUST BE CARRIED ON ASBESTOS PROJECTS

EYES BLU
HAIR BRO
HGT 5' 11"

IF FOUND RETURN TO:
NYSDOL - L&C UNIT
ROOM 161A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2024
Issued April 01, 2022
Revised March 30, 2023

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. KAROL H. LU
AMERICA SCIENCE TEAM NEW YORK, INC
117 EAST 30TH ST
NEW YORK, NY 10016

NY Lab Id No: 11480

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	Item 198.1 of Manual
	EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual



Serial No.: 66402

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2024
Issued April 01, 2022
Revised March 30, 2023

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. PHYLLIS SHILLER
PHOENIX ENVIRONMENTAL LABS
587 EAST MIDDLE TURNPIKE
MANCHESTER, CT 06040

NY Lab Id No: 11301

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Polychlorinated Biphenyls

Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1262 (PCB-1262) in Oil	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A
Aroclor 1268 (PCB-1268) in Oil	EPA 8082A
PCB 101	EPA 8082A
PCB 105	EPA 8082A
PCB 118	EPA 8082A
PCB 128	EPA 8082A
PCB 138	EPA 8082A
PCB 153	EPA 8082A
PCB 170	EPA 8082A
PCB 18	EPA 8082A
PCB 180	EPA 8082A
PCB 183	EPA 8082A
PCB 184	EPA 8082A
PCB 187	EPA 8082A
PCB 195	EPA 8082A
PCB 206	EPA 8082A
PCB 209	EPA 8082A
PCB 28	EPA 8082A
PCB 44	EPA 8082A
PCB 49	EPA 8082A
PCB 52	EPA 8082A
PCB 66	EPA 8082A
PCB 8	EPA 8082A
PCB 87	EPA 8082A
PCB Congeners, Total	EPA 8082A

Serial No.: 66336

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2024
Issued April 01, 2022
Revised March 30, 2023

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. PHYLLIS SHILLER
PHOENIX ENVIRONMENTAL LABS
587 EAST MIDDLE TURNPIKE
MANCHESTER, CT 06040

NY Lab Id No: 11301

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved analytes are listed below:

Acrylates	
Acrylonitrile	EPA TO-15
Methyl methacrylate	EPA TO-15
Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	EPA TO-15
Hexachlorobutadiene	EPA TO-15
Hexachloroethane	EPA TO-15
Metals I	
Lead, Total	EPA 29 (6010)
	EPA 7010
Polychlorinated Biphenyls	
PCBs and Aroclors	EPA TO-10A
Polynuclear Aromatics	
Naphthalene	EPA TO-15
Purgeable Aromatics	
1,2,4-Trimethylbenzene	EPA TO-15
1,2-Dichlorobenzene	EPA TO-15
1,3,5-Trimethylbenzene	EPA TO-15
1,3-Dichlorobenzene	EPA TO-15
1,4-Dichlorobenzene	EPA TO-15
2-Chlorotoluene	EPA TO-15
Benzene	EPA TO-15
Chlorobenzene	EPA TO-15
Ethyl benzene	EPA TO-15
Isopropylbenzene	EPA TO-15
m/p-Xylenes	EPA TO-15

Serial No.: 66338

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

Design and Construction
Division of Construction, 35th Floor, Corning Tower
The Governor Nelson A. Rockefeller Empire State Plaza
Albany, New York 12242
Phone: (518) 474-0331 FAX: (518) 474-8201

SCHEDULE OF SUBMITTALS

PROJECT NO.: 47477-E

FACILITY: YONKERS ARMORY

CONTRACTOR:

PROJECT MANAGER: KELLY PERIARD

DESIGN CONSULTANT: A&J CONSULTING ENGINEERING SERVICES PC

ENGINEER-IN-CHARGE:

LEGEND

PACK: SUBMITTAL PACKAGE

SD: SHOP DRAWINGS

PD: PRODUCT DATA

EPD: ENVIRONMENTAL PRODUCT DECLARATION

SAM: SAMPLES

QCS: QUALITY CONTROL SUBMITTALS

LEED: LEED SUBMITTALS

CCS: CONTRACT CLOSEOUT SUBMITTALS

SUBMITTAL REVIEW RESPONSIBILITY:
F: OGS FIELD OFFICE
F/O: OGS FIELD OFFICE / OFFICE (ALBANY)
D: CONSULTANT / DESIGNER
S: OGS SCHEDULING DEPARTMENT
RSM: Regional Safety Manager

INSTRUCTIONS TO THE CONTRACTOR

1. Refer to **Section 013300 Submittals** of the Project Manual for general requirements regarding submittals and to **Section 017716 - CONTRACT CLOSEOUT** for project closeout submittals.
2. Refer to Sections of the specifications indicated herein for details of the requirements for each submittal listed.
3. Indicate in the rows (spaces) following each item:
a. Critical submittals and long lead items (mark with an 'X'). Some critical submittals may already be identified by the design team. Confirm that these are critical submittals.
b. The date the item will be submitted, and date approval is required (allow at least 3 weeks), and the date delivery of the material or equipment is necessary for completion of the work in accordance with the Progress Schedule. The date entered for the submittal is the last date a substitution will be considered. Proposed substitutions must be made prior to the date entered if more than one substitution is to be submitted for approval. Spaces which contain N/A do not require dates.
4. An example of a Submittal Transmittal (BDC-42) can be located at: http://www.ogs.ny.gov/BU/DC/forms/ContractorConstForms.asp
5. Submit Contract Closeout Submittals (CCS) prior to final inspection.

INSTRUCTIONS TO THE CONSULTANT / DESIGNER

1. Cut and paste required information from each Division (Div.X) tab and place in the S.O.S. tab.
2. Delete Division (Div.X) tabs after the S.O.S. tab has been in-filled.
3. Indicate F, F/O or D in column E. Items in Div.1 have defaults that can be modified as necessary.
4. Indicate items that are critical submittals in column F.
Note:
The following list of submittals is furnished for your convenience in scheduling submittals. The list is not warranted to be complete and does not take precedence over the contract documents. Enter additional submittals, as required and modify this schedule to the specific project. This S.O.S. will be used to populate the submittals website log.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

Design and Constr
Division of Construction, 34th Floor, Corni
The Governor Nelson A. Rockefeller Empire St
Albany, New Yo
Phone: (518) 474-0331 FAX: (518)

SCHEDULE OF SUBMITTALS

PROJECT NO.: 47477-E

SUBMITTALS FOR APPROVAL				Send to:	Critical Submittals	Contractor's Project Allow at least 4 weeks fo (allows time for any resu	
Spec Section	Sub Section	Type	Description	F F/O D S	Mark "X" for all that apply	Projected Transmittal Date:	Projected Approval Date:
007213			**GENERAL CONDITIONS**				
007213	**6.1**	**PD**	ARTICLE 6: Designate in writing competent supervision and/or management representatives as required - include contact number in case of an emergency after work hours, including weekends and holidays (see 011000 Summary of Work)	F			
007213	**8.1**	**PD**	ARTICLE 8: Permits and licenses	F			
011100			**SAFETY**				
011100	**1.4 A**	**QCS**	Site Specific Safety Plan	RSM			
011100	**1.4 B**	**QCS**	Employee Safety Orientation Training and Documentation	D/F			
013300			**SUBMITTALS**				
013300	**1.6**	**PD**	Schedule of Submittals Acknowledgement	F	X		
017329			**REMOVALS, CUTTING AND PATCHING**				
017329	**1.6 A**	**QCS**	Qualification Data: Professional Engineer.	F			
017329	**1.6 B**	**QCS**	Schedule of Selective Demolition Actiities	F			
017329	**1.6 C**	**QCS**	Predemolition Photographs or Video	F			
017716			**CONTRACT CLOSEOUT**				
017716	**1.4**	**CCS**	Project Record Documents	F			
017716	**1.5**	**CCS**	Operation and Maintenance	F			
017716	**1.6**	**CCS**	Warranties	F			
017716	**1.7**	**CCS**	Spare Parts and Maintenance Materials	F			
017900			**VIDEO TRAINING PROGRAMS**				
017900	**1.3 A**	**CCS**	Instruction Program	F			
017900	**1.3 B**	**CCS**	Documentation: Attendance Roster, Evaluations	F			
				F			
260221			**MOTORS AND MOTOR CONTROLLERS**				
260221	**1.4 E**	**PACK**	Submit the product data, and quality control submittals specified below at the same time as a package	D			
260221	**1.4 F 1 a**	**PD**	Motor Controllers - Identify each controller for use with corresponding motor	D			
260221	**1.4 F 1 b**	**PD**	Motor Controllers - Describe overload devices	D			
260221	**1.4 F 1 c**	**PD**	Motor Controllers - Enumerate and describe all accessories	D			
260221	**1.4 F 2 a**	**PD**	All Motors - Catalog sheets, specifications and installation instructions	D			

SCHEDULE OF SUBMITTALS

PROJECT NO.: 47477-E

SUBMITTALS FOR APPROVAL				Send to:	Critical Submittals	Contractor's Project Allow at least 4 weeks fo (allows time for any resu	
Spec Section	Sub Section	Type	Description	F F/O D S	Mark "X" for all that apply	Projected Transmittal Date:	Projected Approval Date:
260221	**1.4 F 2 b**	**PD**	All Motors - Data proving that voltage rating of each motor is in accordance with specified NEMA standard motor voltage	D			
260221	**1.4 F 2 c**	**PD**	All Motors - Data proving that the service factor and temperature rise for the motor's insulation system conforms to NEMA standards for each motor's specific application.	D			
260221	**1.4 F 2 d**	**PD**	All Motors - Data proving that the motor efficiency rating conforms to NEMA testing and marking standards MG1-12.54 and 12.55.	D			
260221	**1.4 F 3**	**PD**	Additional Data for Motors Controlled by Solid State or Adjustable Speed Motor Controllers - Data proving that the motor has been designed for use with associated controller	D			
260221	**1.4 G 1**	**QCS**	Harmonic analysis report	D			
260221	**1.4 G 2**	**QCS**	Company Field Advisor Data	D			
260221	**1.4 H 1**	**CCS**	System acceptance test report	F			
260221	**1.4 H 2**	**CCS**	Certificate: Affidavit, signed by the Company Field Advisor and notarized	F			
260221	**1.4 H 3**	**CCS**	Operation and Maintenance Data: 2 copies covering the installed products, to the Director's Representative	F			
260221	**1.5 D**	**CCS**	Service Availability: A fully equipped service organization shall be available to service the	F			
260519			**LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES**				
260519	**2.1**	**PD**	Copper Building Wire	D			
260519	**2.2**	**PD**	Metal Clad Cable, Type MC	D			
260519	**2.3**	**PD**	Tray Cable, Type TC	D			
260519	**2.4**	**PD**	Connectors and Splices	D			
260519	**1.4 E**	**PD**	Product Schedule: Indicate type, use, location, and termination locations.	D			
260519	**1.4 G**	**QCS**	Qualification Data: For [testing agency] [manufacturer's authorized service representative].	D			
260519	**1.4 H**	**QCS**	Field Quality-Control Reports	D			
260523			**CONTROL VOLTAGE ELECRICAL POWER CABLES**				
260523	**2.2**	**PD**	Backboards	D			
260523	**2.3**	**PD**	Category 5e Balanced Twisted Pair Cable	D			
260523	**2.4**	**PD**	Category 6 Balanced twisted Pair Cable	D			
260523	**2.5**	**PD**	Category 6a Balanced Twisted Pair Cable	D			
260523	**2.6**	**PD**	Balanced Twisted Pair Cable Hardware	D			
260523	**2.7**	**PD**	Twin-Axial Data Highway Cable	D			
260523	**2.8**	**PD**	RS-232 Cable	D			
260523	**2.9**	**PD**	RS-485 Cable	D			
260523	**2.10**	**PD**	Low-Voltage Control Cable	D			
260523	**2.11**	**PD**	Control-Circuit Conductors	D			
260523	**2.12**	**PD**	Fire-Alarm Wire and Cable	D			

SCHEDULE OF SUBMITTALS

PROJECT NO.: 47477-E

SUBMITTALS FOR APPROVAL				Send to:	Critical Submittals	Contractor's Project Allow at least 4 weeks fo (allows time for any resu	
Spec Section	Sub Section	Type	Description	F F/O D S	Mark "X" for all that apply	Projected Transmittal Date:	Projected Approval Date:
260523	**1.3 F**	**QCS**	Qualification Data: For [testing agency] [manufacturer's authorized service representative].	D			
260523	**1.3 G**	**QCS**	Source Quality-Control Reports	D			
260523	**1.3 H**	**QCS**	Field Quality-Control Reports	D			
260526			**GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS**				
260526	**1.3 F**	**SD**	Coordination Drawings: Plans Showing dimensioned locations of grounding Features	D			
260526	**2.3**	**PD**	Conductors	D			
260526	**2.4**	**PD**	Connectors	D			
260526	**2.5**	**PD**	Grounding Electrodes	D			
260526	**1.3 G**	**QCS**	Field Quality-Control Reports	D			
260526	**1.4 A**	**CCS**	Operation and Maintenance Data	F			
260529			**HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**				
260529	**1.3 E 1**	**SD**	Shop Drawings: Hangers. Include product data for components	D			
260529	**1.3 E 2**	**SD**	Shop Drawings: Slotted Support Systems	D			
260529	**1.3 E 3**	**SD**	Shop Drawings: Equipment Supports	D			
260529	**1.3 F**	**SD**	Delegated Design Submittal: Include Design Calculations and details for hangers	D			
260529	**1.3 G**	**SD**	Coordinate Drawings: Reflected Ceiling plans and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers.	D			
260529	**1.3 D 1 a**	**PD**	Slotted Support Systems, Hardware, and Accessories	D			
260529	**1.3 D 1 b**	**PD**	Clamps	D			
260529	**1.3 D 1 c**	**PD**	Hangers	D			
260529	**1.3 D 1 d**	**PD**	Sockets	D			
260529	**1.3 D 1 e**	**PD**	Eye Nuts	D			
260529	**1.3 D 1 f**	**PD**	Fasteners	D			
260529	**1.3 D 1 g**	**PD**	Anchors	D			
260529	**1.3 D 1 h**	**PD**	Saddles	D			
260529	**1.3 D 1 i**	**PD**	Brackets	D			
260533			**RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS**				
260533	**1.5 F**	**SD**	Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections and attachment details	D			
260533	**1.6 A**	**SD**	Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved	D			
260533	**2.1**	**PD**	Metal Conduits and Fittings	D			
260533	**2.2**	**PD**	Nonmetallic Conduits and Fittings	D			
260533	**2.3**	**PD**	Metal Wireways and Auxiliary Gutters	D			
260533	**2.4**	**PD**	Nonmetallic Wireways and Auxiliary Gutters	D			

SCHEDULE OF SUBMITTALS

PROJECT NO.: 47477-E

SUBMITTALS FOR APPROVAL				Send to:	Critical Submittals	Contractor's Project Allow at least 4 weeks fo (allows time for any resu	
Spec Section	Sub Section	Type	Description	F F/O D S	Mark "X" for all that apply	Projected Transmittal Date:	Projected Approval Date:
260533	**2.5**	**PD**	Surface Raceways	D			
260533	**2.6**	**PD**	Boxes, Enclosures, and Cabinets	D			
260533	**1.5 G**	**SAM**	For wireways and for each color and texture specified, 12 inches long	D			
260533	**1.5 E**	**EPD**	Environmental Product Declaration				
260543			**UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS**				
260543	**1.4 F**	**SD**	Shop Drawings: Precast or Factory-Fabricated Underground Utility Structures and Factory-Fabricated Handholes and Boxes Other Than Precast Concrete	D			
260543	**1.4 H**	**SD**	Coordination Drawings: For duct and duct bank. Show duct profiles and coordination with other utilities and underground structures	D			
260543	**2.1**	**PD**	Metal Conduit And Fittings	D			
260543	**2.2**	**PD**	Rigid Nonmetallic Duct	D			
260543	**2.3**	**PD**	Duct Accessories	D			
260543	**1.4 E**	**EPD**	Environmental Product Declaration				
260543	**1.4 I**	**QCS**	Qualification Data: For professional engineer and testing agency responsible for testing nonconcrete handholes and boxes				
260543	**1.4 J**	**QCS**	Product Certificates				
260543	**1.4 K**	**QCS**	Source Quality Control Reports	F			
260543	**1.4 L**	**QCS**	Field Quality-control Reports	F			
260543	**1.5**	**CCS**	Maintenance Materials	F			
260544			**SLEEVES AND SLEEVE SEALS FOR ELECTRICAL RACEWAYS AND CABLING**				
260544	**2.2**	**PD**	Round Sleeves	D			
260544	**2.3**	**PD**	Rectangular Sleeves	D			
260544	**2.4**	**PD**	Sleeve Seal System	D			
260544	**2.5**	**PD**	Grout	D			
260544	**2.6**	**PD**	Pourable Sealants	D			
260544	**2.7**	**PD**	Foam Sealants	D			
260544	**1.4 E**	**EPD**	Environmental Product Declaration				
260553			**IDENTIFICATION FOR ELECTRICAL SYSTEMS**				
260553	**1.3 F**	**SD**	Identification Schedule: For each piece of electrical equipment and electrical system components to be an index of nomenclature for electrical equipment and system components used in identification signs and labels. Use same designations indicated on Drawings.	D			
260553	**1.3 G**	**SD**	Delegated-Design Submittal: for Arc-Flash Hazard Study	D			
260553	**2.3**	**PD**	Labels	D			
260553	**2.4**	**PD**	Bands and Tubes	D			
260553	**2.5**	**PD**	Tapes and Stencils	D			
260553	**2.6**	**PD**	Tags	D			
260553	**2.7**	**PD**	Signs	D			

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260553	**2.8**	**PD**	Cable Ties	D			
260553	**2.9**	**PD**	Miscellaneous Identification Products	D			
260553	**1.3 E**	**SAM**	For each type of label and sign to illustrate composition, size, colors, lettering style, mounting provisions, and graphic features of identification products.	F			
260573.13			**SHORT CIRCUIT STUDIES**				
260573.13	**1.4 D 1**	**PD**	Computer Software Program to be used for Studies	D			
260573.13	**1.4 D 2 a**	**PD**	Short-Circuit study input data, including completed computer program input data sheets	D			
260573.13	**1.4 D 2 b**	**PD**	Short-Circuit study and equipment evaluation report; signed, dated, and sealed by a Qualified engineer	D			
260573.13	**1.4 F 1**	**QCS**	Qualification Data for Power Systems analysis Software Developer	D			
260573.13	**1.4 F 2**	**QCS**	Qualification Data for Power Systems analysis specialist	D			
260573.13	**1.4 F 3**	**QCS**	Qualified Data for Field Adjusting Agency	D			
260573.13	**1.4 G**	**QCS**	Product Certificates: For short-circuit study software, certifying compliance with IEEE 399	D			
260573.13	**1.5 A**	**CCS**	Operation and Maintenance Data	F			
260573.16			**COORDINATION STUDIES**				
260573.16	**1.4 D 1**	**PD**	Computer Software Program to be used for Studies	D			
260573.16	**1.4 D 2**	**PD**	Coordination-study input data, including completed computer program input data sheets.	D			
260573.16	**1.4 D 3**	**PD**	Overcurrent protective device coordination study report	D			
260573.16	**1.4 F 1**	**QCS**	Power System Analysis Software Developer	D			
260573.16	**1.4 F 2**	**QCS**	Power Systems Analysis Specialist	D			
260573.16	**1.4 F 3**	**QCS**	Field Adjusting Agency	D			
260573.16	**1.4 G**	**QCS**	Product Certificates: For overcurrent protective device coordination study software, certifying compliance with IEEE 399	D			
260573.16	**1.5 A**	**CCS**	Operation and Maintenance Data	F			
260573.19			**ARC FLASH HAZARD ANALYSIS**				
260573.19	**1.4 D**	**PD**	Computer Software Program to be used for Studies	D			
260573.19	**1.4 E 1**	**PD**	Arc-flash study input data, including completed computer program input data sheets.	D			
260573.19	**1.4 E 2**	**PD**	Arc-flash study report	D			
260573.19	**2.3**	**PD**	Arc-flash Warning Labels	D			
260573.19	**1.4 G 1**	**QCS**	Power System Analysis Software Developer	D			
260573.19	**1.4 G 2**	**QCS**	Power Systems Analysis Specialist	D			
260573.19	**1.4 G 3**	**QCS**	Field Adjusting Agency	D			
260573.19	**1.5 A**	**CCS**	Operation and Maintenance Data	F			

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260923			**LIGHTING CONTROL DEVICES**				
260923	**1.3 D 1 a**	**SD**	Shop Drawings for Occupancy sensors	D			
260923	**1.3 D 1 b**	**SD**	Shop Drawings for Vacancy Sensors	D			
260923	**1.3 D 2**	**SD**	Interconnection diagrams showing field-installed wiring	D			
260923	**1.3 D 3**	**SD**	Diagrams for power, signal, and control wiring	D			
260923	**1.3 F 1**	**SD**	Coordination Drawings for Suspended Ceiling Components	D			
260923	**1.3 F 2**	**SD**	Coordination Drawings for structural members to which equipment will be attached	D			
260923	**1.3 F 3**	**SD**	Coordination Drawings for items penetrating finished ceiling	D			
260923	**2.1**	**PD**	Outdoor Photoelectric Switches, Solid State, Luminaire-Mounted	D			
260923	**2.2**	**PD**	Outdoor Photoelectric Switches, Low Voltage	D			
260923	**2.3**	**PD**	Daylight-Harvesting switching Controls	D			
260923	**2.4**	**PD**	Daylight-Harvesting Dimming Controls, Digital	D			
260923	**2.5**	**PD**	Room Lighting Controller	D			
260923	**2.6**	**PD**	Indoor Occupancy and Vacancy Sensors	D			
260923	**2.7**	**PD**	Switchbox-Mounted Occupancy Sensors	D			
260923	**2.8**	**PD**	Conductors And Cables	D			
260923	**1.3 G**	**QCS**	Field Quality-Control Reports	D			
260923	**1.3 H**	**QCS**	Sample Warranty	D			
260923	**1.4 A**	**CCS**	Operation and Maintenance Data	F			
260923	**1.4 B**	**CCS**	Software and Firmware Operational Documentation	F			
262413			**SWITCHBOARDS**				
262413	**1.3 E**	**SD**	Shop Drawings: For each Switchboard and related equipment	D			
262413	**1.3 E 1**	**SD**	Shop Drawings: Include dimensioned plans, elevations, sections, and details, including required clearances and service space around equipment. Show tabulations of installed devices, equipment features, and ratings	D			
262413	**1.3 E 2**	**SD**	Shop Drawings: Detail enclosure types for types other than NEMA 250, Type 1	D			
262413	**1.3 E 3**	**SD**	Shop Drawings: Detail bus configuration, current, and voltage ratings.	D			
262413	**1.3 E 4**	**SD**	Shop Drawings: Detail short-circuit current rating of switchboards and overcurrent protective devices.	D			
262413	**1.3 E 5**	**SD**	Shop Drawings: Include descriptive documentation of optional barriers specified for electrical insulation and isolation	D			
262413	**1.3 E 6**	**SD**	Shop Drawings: Detail utility company's metering provisions with indication of approval by utility company.	D			
262413	**1.3 E 7**	**SD**	Include evidence of NRTL listing for series rating of installed devices.	D			

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Spec Section	Sub Section	Type	Description	F F/O D S	Mark "X" for all that apply	Projected Transmittal Date:	Projected Approval Date:
262413	**1.3 E 8**	**SD**	Shop Drawings: Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.	D			
262413	**1.3 E 9**	**SD**	Shop Drawings: Include time-current coordination curves for each type and rating of overcurrent protective device included in switchboards. Submit on translucent log-log graft paper; include selectable ranges for each type of overcurrent protective device.	D			
262413	**1.3 E 10**	**SD**	Shop Drawings: Include schematic and wiring diagrams for power, signal, and control wiring.	D			
262413	**2.1**	**PD**	Switchboards	D			
262413	**2.2**	**PD**	Surge Protection Devices	D			
262413	**2.3**	**PD**	Disconnecting and Overcurrent Protective Devices	D			
262413	**2.4**	**PD**	Instrumentation	D			
262413	**2.5**	**PD**	Control Power	D			
262413	**2.6**	**PD**	Accessory Components and Features	D			
262413	**2.7**	**PD**	Identification	D			
262413	**1.3 F**	**QCS**	Delegated Design Submittal	D			
262413	**1.3 H**	**QCS**	Qualification Data: For Installer	D			
262413	**1.3 I**	**QCS**	Field Quality-Control reports	D			
262413	**1.4 A**	**CCS**	Operation and Maintenance Data	F			
262413	**1.5 A**	**CCS**	Maintenance Material Submittals: Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.	F			
262416			**PANELBOARDS**				
262416	**1.3 B**	**SD**	Shop Drawings: For each panelboard and related equipment	D			
262416	**2.2**	**PD**	Panelboards	D			
262416	**2.3**	**PD**	Disconnecting and Overcurrent Protective Devices	D			
262416	**2.4**	**PD**	Maintenance Material Items	D			
262416	**1.4 A**	**PD**	Panelboard Schedules	D			
262416	**1.4 C**	**SD**	Shop Drawings: For Each Panelboard	D			
262416	**1.4 D**	**QCS**	Manufacturer's Published Instructions	D			
262416	**1.4 E**	**QCS**	Field Reports	D			
262416	**1.3 C**	**QCS**	Field Quality Control Reports	D			
262416	**1.5**	**CCS**	Operation and Maintenance Data	F			
262416	**1.6**	**CCS**	Maintenance Material Submittals	F			
262416	**1.7**	**CCS**	Qualifications	F			
262726			**WIRING DEVICES**				
262726	**1.4 E**	**SD**	Shop Drawings: List of legends and description of materials and process used for premarking wall plates.	D			
262726	**2.2**	**PD**	Standard-Grade Receptacles, 125 V, 20A	D			
262726	**2.3**	**PD**	GFCI Receptacles, 125V, 20A	D			

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262726	**2.4**	**PD**	Toggle Switches, 120/277 V, 20 A	D			
262726	**2.5**	**PD**	Occupancy Sensors	D			
262726	**2.6**	**PD**	Wall Plates	D			
262726	**2.7**	**PD**	Poke-Through Assemblies	D			
262726	**1.4 G**	**QCS**	Field Quality Control Reports	D			
262726	**1.5**	**CCS**	Operation and Maintenance Data	F			
262726	**1.6**	**CCS**	Maintenance Material Submittals: Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.	F			
262813			**FUSES**				
262813	**2.2**	**PD**	Fuses Rated 600V or Less	D			
262813	**1.4**	**CCS**	Maintenance Materials: Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.	F			
262816			**ENCLOSED SWITCHES AND CIRCUIT BREAKERS**				
262816	**1.4 E**	**SD**	Shop Drawings: For enclosed switches and circuit breakers.	D			
262816	**2.2**	**PD**	Fusible Switches	D			
262816	**2.3**	**PD**	NonFusible Switches	D			
262816	**2.4**	**PD**	Receptacle Switches	D			
262816	**2.5**	**PD**	Shunt Trip Switches	D			
262816	**2.6**	**PD**	Molded-Case Circuit Breakers	D			
262816	**2.7**	**PD**	Enclosures	D			
262816	**1.4 G**	**QCS**	Qualification Data: For qualified testing agency	D			
262816	**1.4 H**	**QCS**	Seismic Qualification Data	D			
262816	**1.4 I**	**QCS**	Field Quality Control Reports	D			
262816	**1.5**	**CCS**	Operation and Maintenance Data	F			
262816	**1.6**	**CCS**	Maintenance Material Submittals: Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.	F			
264313			**SURGE PROTECTION FOR LOW VOLTAGE ELECTRICAL POWER CIRCUITS**				
264313	**2.1**	**PD**	Type 2 Surge Protective Devices (SPDS)	D			
264313	**2.2**	**PD**	Enclosures	D			
264313	**2.3**	**PD**	Conductors and Cables	D			
264313	**1.4 F**	**QCS**	Field quality-control reports.	D			
264313	**1.4 G**	**QCS**	Sample Warranty: For manufacturer's special warranty.	D			

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264313	**1.5**	**CCS**	Maintenance Data: For SPDs to include in maintenance manuals.	F			
264313	**1.7 A**	**QCS**	List of Completed Installations: If brand names other than those specified are proposed for use, furnish the name, address, and telephone number of at least 5 comparable installations that can prove the proposed products have operated satisfactorily for one year.	D			
264313	**1.7 B 1**	**QCS**	Company Field Advisor Data: Include: Name, business address and telephone number of Company Field Advisor secured for the required services.	D			
264313	**1.7 B 2**	**QCS**	Company Field Advisor Data: Certified statement from the Company listing the qualifications of the Company Field Advisor.	D			
264313	**1.7 B 3**	**QCS**	Services and each product for which authorization is given by the Company listed specifically for this project.	D			
2625119			**LED INTERIOR LIGHTING**				
265119	**1.4 E**	**SD**	Shop Drawings: For nonstandard or custom luminaires.	D			
265119	**1.4 K**	**SD**	Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:	D			
265119	**1.4 K 1**	**SD**	Coordination Drawings: Luminaires.	D			
265119	**1.4 K 2**	**SD**	Coordination Drawings: Suspended ceiling components.	D			
265119	**1.4 K 3**	**SD**	Coordination Drawings: Partitions and millwork that penetrate the ceiling or extend to within 12 inches of the plane of the luminaires.	D			
265119	**1.4 K 4**	**SD**	Coordination Drawings: Structural members to which equipment and Luminaires will be attached.	D			
265119	**1.4 K 5**	**SD**	Coordination Drawings: Initial access modules for acoustical tile, including size and locations.	D			
265119	**1.4 K 6**	**SD**	Coordination Drawings: Items penetrating finished ceiling	D			
265119	**1.4 K 7**	**SD**	Coordination Drawings: Moldings.	D			
265119	**1.4 I**	**PD**	Product Schedule: For luminaires and lamps	D			
265119	**1.4 D**	**PD**	Cylinder	D			
265119	**2.3**	**PD**	Downlight Fixture - Types E1-E5, Y1, Y2, F1	D			
265119	**2.4**	**PD**	Recessed, Linear – Types D1	D			
265119	**2.5**	**PD**	Strip Light – Type ST-1	D			
265119	**2.6**	**PD**	Surface Mount, Linear – Type A-3, A-5	D			
265119	**2.7**	**PD**	Surface Mount, Nonlinear – Type EL-1	D			
265119	**2.8**	**PD**	Suspended, Linear - Type A1, A2, A4	D			
265119	**2.9**	**PD**	Suspended, Nonlinear - Type M1	D			
265119	**2.10**	**PD**	Suspended, Linear - Type X1	D			
265119	**2.11**	**PD**	Highbay Nonlinear - Type Z1	D			

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265119	**2.12**	**PD**	Materials	D			
265119	**2.13**	**PD**	Metal Finishes	D			
265119	**2.14**	**PD**	Luminaire Support	D			
265119	**1.4 F**	**SAM**	Samples: For each luminaire and for each color and texture with standard factory-applied finish.	F			
265119	**1.4 G**	**SAM**	Samples for Initial Selection: For each type of luminaire with custom factory-applied finishes.	F			
265119	**1.4 H**	**SAM**	Samples for Verification: For each type of luminaire.	F			
265119	**1.4 L**	**QCS**	Qualification Data: For testing laboratory providing photometric data for luminaires.	D			
265119	**1.4 M**	**SAM**	Product Certificates: For each type of luminaire	F			
265119	**1.4 N**	**QCS**	Product Test Reports: For each type of luminaire	D			
265119	**1.4 O**	**QCS**	Sample Warranty	D			
265119	**1.5**	**CCS**	Operation and Maintenance Data: For luminaires and lighting systems to include in operation and maintenance manuals.	F			
265119	**1.6**	**CCS**	Maintenance Materials Submittals: Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.	F			
265213			**EMEGENCY AND EXIT LIGHTING**				
265213	**1.4 E**	**SD**	Shop Drawings: For nonstandard or custom luminaires.	D			
265213	**1.4 K**	**SD**	Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:	D			
265213	**1.4 K 1**	**SD**	Coordination Drawings: Luminaires.	D			
265213	**1.4 K 2**	**SD**	Coordination Drawings: Suspended ceiling components.	D			
265213	**1.4 K 3**	**SD**	Coordination Drawings: Partitions and millwork that penetrate the ceiling or extend to within 12 inches of the plane of the luminaires.	D			
265213	**1.4 K 4**	**SD**	Coordination Drawings: Structural members to which equipment will be attached.	D			
265213	**1.4 K 5**	**SD**	Coordination Drawings: Size and location of initial access modules for acoustical tile.	D			
265213	**1.4 K 6**	**SD**	Coordination Drawings: Items penetrating finished ceiling	D			
265213	**1.4 K 7**	**SD**	Coordination Drawings: Moldings.	D			
265213	**2.2**	**PD**	Exit Signs	D			
265213	**2.3**	**PD**	Materials	D			
265213	**2.4**	**PD**	Metal Finishes	D			
265213	**2.5**	**PD**	Luminaire Support Components	D			
265213	**1.4 F**	**SAM**	Samples: For each product and for each color and texture specified.	F			
265213	**1.4 G**	**SAM**	Samples for Initial Selection: For each type of luminaire with factory-applied finishes.	F			
265213	**1.4 H**	**SAM**	Samples for Verification: For each type of luminaire	F			

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265213	**1.4 I**	**QCS**	Product Schedule	F			
265213	**1.4 L**	**QCS**	Qualification Data: For testing laboratory providing photometric data for luminaires.	D			
265213	**1.4 M**	**QCS**	Product Test Reports: For each luminaire for tests performed by a qualified testing agency.	D			
265213	**1.4 N**	**QCS**	Sample Warranty: For manufacturer's[special] warranty.	F			
265213	**1.5**	**CCS**	Operation and Maintenance Data: For luminaires and lighting systems to include in emergency, operation, and maintenance manuals.	F			
265213	**1.6**	**CCS**	Maintenance Materials Submittals: Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.	F			
265619			**LED EXTERIOR LIGHTING**				
265619	**1.4 E**	**SD**	Shop Drawings: For nonstandard or custom luminaires.	D			
265619	**2.2**	**PD**	Luminaire-Mounted Photoelectric Relays	D			
265619	**2.3**	**PD**	Luminaire Types	D			
265619	**2.4**	**PD**	Finishes	D			
265619	**1.4 F**	**SAM**	Samples: For each luminaire and for each color and texture indicated with factory-applied finish.	D			
265619	**1.4 G**	**QCS**	Product Schedule: For luminaires and lamps	D			
265619	**1.4 H**	**QCS**	Delegated-Design Submittal: For luminaire supports	D			
265619	**1.4 J**	**QCS**	Qualification Data: For testing laboratory providing photometric data for luminaires	D			
265619	**1.4 K**	**QCS**	Product Certificates: For Luminaires and Photoelectric Relays	D			
265619	**1.4 L**	**QCS**	Product Test Reports: For each luminaire, for tests performed by manufacturer and witnessed by a qualified testing agency	D			
265619	**1.4 M**	**QCS**	Source Quality-Control Reports	D			
265619	**1.4 N**	**QCS**	Sample Warranty	F			
265619	**1.5**	**CCS**	Operation and Maintenance Data: For luminaires to include in operation and maintenance manuals.	F			
265619	**1.5 A 1**	**CCS**	Operation and Maintenance Data: Provide a list of all lamp types used on Project. Use ANSI and manufacturers' codes.	F			
265619	**1.5 A 2**	**CCS**	Operation and Maintenance Data: Provide a list of all photoelectric relay types used on Project; use manufacturers' codes	F			
265619	**1.6**	**CCS**	Maintenance Material Submittals	F			
283101			**PROTECTED PREMISES FIRE ALARM SYSTEM**				
283101	**1.4 F 1**	**SD**	Composite wiring and/or schematic diagrams of the complete system as proposed to be installed (standard diagrams will not be acceptable).	D			
283101	**1.4 G 2**	**PD**	Bill of materials	D			
283101	**1.4 G 3**	**PD**	Detailed description of system operation. Format similar to SYSTEM DESCRIPTION	D			

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283101	**1.4 G 4**	**PD**	Sample procedure, programming and print-out for alarm, acknowledgment, and system reset.	D			
283101	**1.4 G 5**	**PD**	Total electrical load of the complete system in supervisory and alarm conditions	D			
283101	**1.4 G 6**	**PD**	Statement from the Company producing the system, for each size and type of single conductor and multiconductor cable proposed for use, indicating that the electrical characteristics meet the requirements of the Company.	D			
283101	**1.4 G 7**	**PD**	Data from the Company furnishing the products, proving that detection devices that receive their power from the initiating device circuit or a signaling line circuit of a fire alarm control unit are UL listed for use with the control unit	D			
283101	**1.4 G 8**	**PD**	Detailed description of procedure proposed to test individual initiating devices	D			
283101	**1.4 G 9**	**PD**	Name, address and telephone number of nearest fully equipped service organization	D			
283101	**1.4 G 10**	**PD**	elevator hoistway and machine room heat detecting	D			
283101	**2.1 A**	**PD**	Main Network	D			
283101	**2.1 B**	**PD**	Fire Alarm Control Panels	D			
283101	**2.1 C**	**PD**	Remote Auxiliary Power Supplies	D			
283101	**2.1 D**	**PD**	Remote Annunciator/Control Centers	D			
283101	**2.2 B 2**	**PD**	Ceiling Mounted Detecting devices - Smoke Detectors	D			
283101	**2.2 B 3**	**PD**	Ceiling Mounted Detecting devices - Heat Detectors	D			
283101	**2.2 C 2**	**PD**	Ceiling Mounted Sensors - Smoke Sensors	D			
283101	**2.2 C 3**	**PD**	Ceiling Mounted Sensors - Heat Sensors	D			
283101	**2.2 D 1**	**PD**	Air Duct Smoke Detectors - Photoelectric Type	D			
283101	**2.2 D 2**	**PD**	Air Duct Smoke Detectors - Remote Alarm Indicator For Use With Air Duct Smoke Detectors	D			
283101	**2.2 E 1**	**PD**	Air Duct Smoke Sensors - Photoelectric Type	D			
283101	**2.2 E 2**	**PD**	Air Duct Smoke Sensors - Remote Alarm Indicator For Use With Air Duct Smoke Sensors	D			
283101	**2.2 F**	**PD**	Flame Detecting Devices	D			
283101	**2.2 G**	**PD**	Projected Beam Type Detectors	D			
283101	**2.2 H**	**PD**	Manual Fire Alarm Boxes	D			
283101	**2.3 B**	**PD**	Combination Audible/Visible Appliances - Wall Mounted	D			
283101	**2.3 C**	**PD**	Visible Appliances - Wall Mounted	D			
283101	**2.3 D**	**PD**	Audible Appliances - Wall Mounted	D			
283101	**2.4 A**	**PD**	Digital Alarm Communicator Transmitter	D			
283101	**2.4 B**	**PD**	Digital Alarm Communicator Receiver	D			
283101	**2.5**	**PD**	Modem Units	D			
283101	**2.7**	**PD**	Protective Devices	D			
283101	**2.8**	**PD**	Terminal Strip Cabinets	D			
283101	**2.9**	**PD**	Power-Limited Fire Alarm Circuit Conductors	D			
283101	**2.10**	**PD**	Non-Power-Limited Fire Alarm Circuit Conductors	D			
283101	**2.11**	**PD**	Metal-Clad Cable	D			
283101	**2.12 B**	**PD**	Fire Alarm Circuit Integrity (CI) Cable	D			

SCHEDULE OF SUBMITTALS

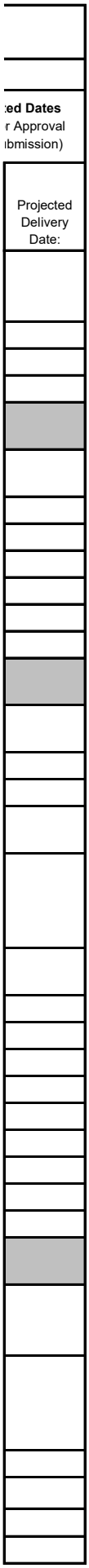
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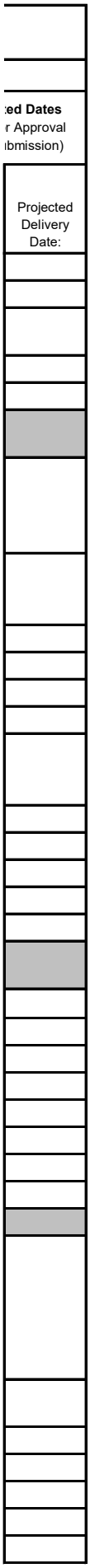
SUBMITTALS FOR APPROVAL				Send to:	Critical Submittals	Contractor's Project Allow at least 4 weeks fo (allows time for any resu	
Spec Section	Sub Section	Type	Description	F F/O D S	Mark "X" for all that apply	Projected Transmittal Date:	Projected Approval Date:
283101	**2.12 C**	**PD**	MI Cable	D			
283101	**2.12 D**	**PD**	Other 2-hour Fire Resistive Cables	D			
283101	**2.13 A**	**PD**	Procedure Sign	D			
283101	**2.13 B**	**PD**	Wiring Diagram	D			
283101	**2.13 C**	**PD**	Nameplates	D			
283101	**2.13 D**	**PD**	Fire Alarm Signs	D			
283101	**2.13 E**	**PD**	Manual Fire Alarm Box Signs	D			
283101	**2.13 F**	**PD**	Markers	D			
283101	**2.15**	**PD**	Accessories	D			
283101	**2.16**	**PD**	Fire Extinguisher	D			
283101	**1.4 H 1**	**QCS**	Copy of license required by New York State General Business Law Article 6-D for installing Fire Alarm Systems	D			
283101	**1.4 H 2**	**QCS**	Company Field Advisor Data	D			
283101	**1.4 H 3**	**QCS**	Outline of Onsite Training Programs Required of Company Field Advisor	F			
283101	**1.4 I 1**	**CCS**	System acceptance test report	F			
283101	**1.4 I 2 a**	**CCS**	Certificates: Affidavit, signed by the Company Field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly	F			
283101	**1.4 I 2 b**	**CCS**	Certificates: NFPA Record of Completion	F			
283101	**1.4 I 3**	**CCS**	Operation and Maintenance Data: Deliver 2 copies	F			
283101	**1.6 A**	**CCS**	Service Availability: A fully equipped service organization capable of guaranteeing response time within 8 hours to service calls shall be available 24 hours a day, 7 days a week to service the completed Work	F			
283101	**1.6 B 1**	**CCS**	Spare Parts: 50 percent spare of each type fuse	F			
283101	**1.6 B 2**	**CCS**	Spare Parts: 30 percent spare of each type lamp (except LED type).	F			
283101	**1.6 B 3**	**CCS**	Spare Parts: 10 percent spare of each type initiating device	F			
283101	**1.6 B 4**	**CCS**	Spare Parts: 10 percent spare of each type notification appliance	F			
283101	**1.6 B 5**	**CCS**	Spare Parts: Two tools to remove and install each type and size of vandal resistant fastener	F			
283101	**1.6 B 6**	**CCS**	Spare Parts: Twenty-four code locator cards (minimum size 5 x 8 inches) with the codes and location associated with each code imprinted thereon.	F			
283101	**1.6 B 7**	**CCS**	Spare Parts: Twenty-four card holders for code locator cards	F			
Updated 08/27/2024							

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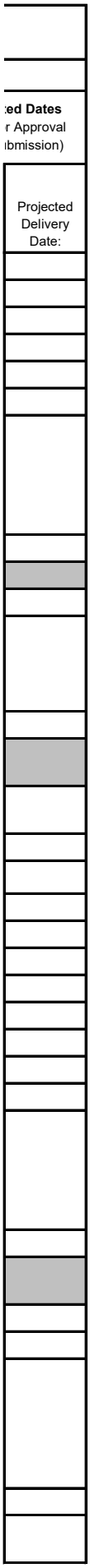

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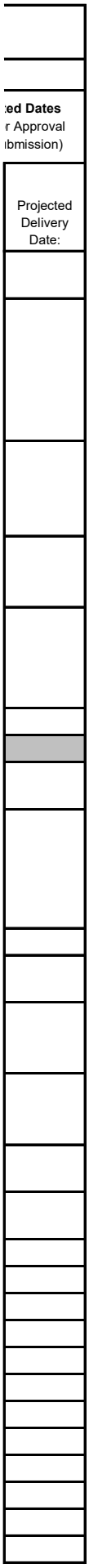

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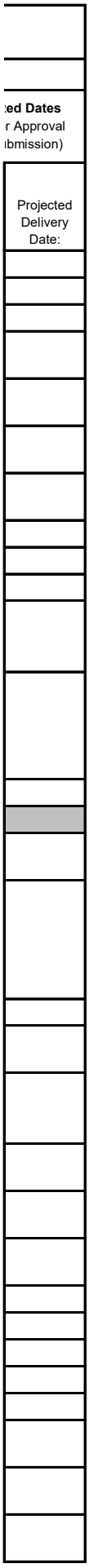

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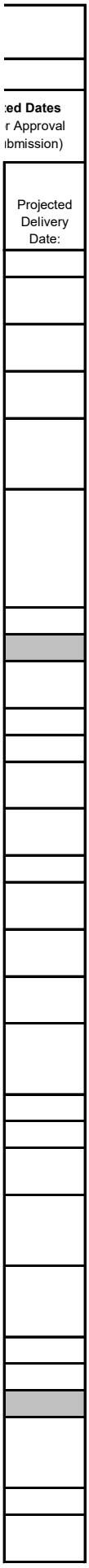
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SDVOB UTILIZATION PLAN

☐ **Initial Plan** ☐ **Revised plan** **Contract/Solicitation #** _____

INSTRUCTIONS: This Utilization Plan must contain a detailed description of the supplies and/or services to be provided by each NYS **Certified** Service-Disabled Veteran-Owned Business (SDVOB) under the contract. By submission of this Plan, the Bidder/Contractor commits to making good faith efforts in the utilization of SDVOB subcontractors and suppliers as required by the SDVOB goals contained in the Solicitation/Contract. Making false representations or providing information that shows a lack of good faith as part of, or in conjunction with, the submission of a Utilization Plan is prohibited by law and may result in penalties including, but not limited to, termination of a contract for cause, loss of eligibility to submit future bids, and/or withholding of payments. Firms that do not perform commercially useful functions may not be counted toward SDVOB utilization. Attach additional sheets if necessary.

BIDDER/CONTRACTOR INFORMATION		**SDVOB Goals In Contract**
Bidder/Contractor Name:	NYS Vendor ID:	%
Bidder/Contractor Address (Street, City, State and Zip Code):		
Bidder/Contractor Telephone Number:	Contract Work Location/Region:	
Contract Description/Title:		

CONTRACTOR INFORMATION			
Prepared by (Signature):	Name and Title of Preparer:	Telephone Number:	Date:
Email Address:			

If unable to meet the SDVOB goals set forth in the solicitation/contract, bidder/contractor must submit a request for waiver on the SDVOB Waiver Form.

SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform): $_____ or _____%		

SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed Description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform): $_____ or _____%		

FOR OGS USE ONLY				
OGS Authorized Signature:		☐ **Accepted**	☐ **Accepted as Noted**	☐ **Notice of Deficiency**
NAME (Please Print):	**SDVOB %/$** ____	____	**Date Received:**	**Date Processed:**
Comments:				

NYS CERTIFIED SDVOB SUBCONTRACTOR/SUPPLIER INFORMATION: The directory of New York State Certified SDVOBs can be viewed at: https://ogs.ny.gov/Veterans/default.asp

Note: All listed Subcontractors/Suppliers will be contacted and verified by OGS.

ADDITIONAL SHEET

Bidder/Contractor Name:	**Contract/Solicitation #**_____

SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed Description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform): $_____ or _____%		
SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed Description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform): $_____ or _____%		
SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed Description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform): $_____ or _____%		
SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed Description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform)): $_____ or _____%		
SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed Description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform): $_____ or _____%		

NEW YORK STATE OF OPPORTUNITY. | Office of General Services | Division of Service-Disabled Veterans' Business Development

Instructions for Completing the Monthly SDVOB Compliance Report – SDVOB 101

The SDVOB Monthly Reporting Form is to be completed by the Contractor/Vendor, and submitted by the 10th day of *each* month for the duration of the Contract. This form should include **all** (e.g. SDVOB and non SDVOB) Subcontractors and/or Suppliers assigned by the Contractor/Vendor to perform work during the contract. This reporting should also include payments made by your Subcontractors and/or Suppliers to SDVOB firms.

Complete the form as specified below.

Contract No.	Indicate the OGS Contract No.
Contractor/Vendor Name and Address	Provide your firm's name and address.
Federal ID No.	Enter your firm's Federal ID No.
Goals	Indicate SDVOB participation goals.
Reporting Period	Fill in the month and year of reporting period. One copy must be submitted with final payment application.
Description of Project	Briefly describe the work you are providing under the terms of this contract.
Firm Name and Address	Provide the name, address and phone number of **all** Subcontractors/Suppliers assigned by the Contractor/Vendor on this contract or purchase agreement(s).
Federal ID No.	Enter the Subcontractor's/Supplier's Federal ID No. If no Federal ID No. has been assigned, provide only the owner's last four (4) digits of his or her Social Security No.
Payment This Month	Indicate the amount paid *this month* to each Subcontractor/Supplier. If there was no income activity for a Subcontractor/Supplier, please check the box indicating "No Payment This Month."
Contract Amount	Enter the total contract amount or purchase agreement(s) amount for each Subcontractor/Supplier.
Description of Work/Supplies	Briefly describe the work performed or supplies provided by each Subcontractor/Supplier.

Submit to:

Design & Construction SDVOB Compliance Specialist
35th Floor, Corning Tower
Albany, New York 12242
Email: DCSDVOB@ogs.ny.gov

CONTRACTOR'S MONTHLY SDVOB COMPLIANCE REPORT (DUE ON THE 10TH DAY OF EACH MONTH FOR THE PRECEDING MONTH'S ACTIVITY AS EVIDENCE TOWARDS ACHIEVEMENT OF THE SDVOB GOALS ON THE CONTRACT)

Contract No.: _____

Contractor/Vendor Name, Address and Phone No.:	Contractor/Vendor Federal ID No.:	SDVOB Goals	Reporting Period	
	Description of Project:	%	Month	Year

Firm Name, Address and Phone Number (List All Firms)	Description of Work or Supplies Provided	Designation		Payment This Month	Contract Amount
Federal ID No.:		☐ SDVOB ☐ Sub ☐ Broker ☐ Joint Venture ☐ Written Contract	☐ Supplier ☐ Team ☐ Other ☐ No Written Contract	☐ No Payment This Month	
Federal ID No.:		☐ SDVOB ☐ Sub ☐ Broker ☐ Joint Venture ☐ Written Contract	☐ Supplier ☐ Team ☐ Other ☐ No Written Contract	☐ No Payment This Month	
Federal ID No.:		☐ SDVOB ☐ Sub ☐ Broker ☐ Joint Venture ☐ Written Contract	☐ Supplier ☐ Team ☐ Other ☐ No Written Contract	☐ No Payment This Month	
Federal ID No.:		☐ SDVOB ☐ Sub ☐ Broker ☐ Joint Venture ☐ Written Contract	☐ Supplier ☐ Team ☐ Other ☐ No Written Contract	☐ No Payment This Month	

_____ Signature

_____ Print Name and Title

_____ Date

Submission of this form constitutes the Contractor's acknowledgement as to the accuracy of the information contained herein. Failure to submit complete and accurate information may result in a finding of noncompliance, non-responsibility, suspension and/or termination of the Contract.

For OGS Use Only	
Reviewed By:	Date:

APPLICATION FOR WAIVER OF SDVOB PARTICIPATION GOAL

(must be submitted before requesting final payment on the Contract)

Section 1: Basic Information

Contractor's Name:	Federal Identification Number:
Street Address:	E-Mail Address:
City, State, Zip Code:	Telephone: ( ) -

Contract Number:	SDVOB CONTRACT GOALS %

Section 2: Type of SDVOB Waiver Requested

☐ Total	☐ Partial	If partial waiver, please enter the revised SDVOB percentage:	%

Please explain the reason for the waiver request:

Section 3: Supporting Documentation

Provide the following documentation as evidence of your good faith efforts to meet the SDVOB goals set forth in the contract and in support of your waiver application:

- ❑ **Attachment A.** Copies of solicitations to SDVOBs and any responses thereto.
- ❑ **Attachment B.** Explanation of the specific reasons each SDVOB that responded to Bidders/Contractors' solicitation was not selected.
- ❑ **Attachment C.** Dates of any pre-bid, pre-award or other meetings attended by Contractor, if any, scheduled by OGS with certified SDVOBs whom OGS determined were capable of fulfilling the SDVOB goals set forth in the contract.
- ❑ **Attachment D.** Information describing the specific steps undertaken to reasonably structure the contract scope of work for the purpose of subcontracting with, or obtaining supplies from, certified SDVOBs.
- ❑ **Attachment E.** Other information deemed relevant to the request.

Section 4: Signature and Contact Information

By signing and submitting this form, the contractor certifies that a good faith effort has been made to promote SDVOB participation pursuant to the SDVOB requirements set forth under the solicitation or Contract. Failure to submit complete and accurate information may result in a finding of noncompliance, non-responsibility, and a suspension or termination of the contract.

Prepared By: (Signature)	Date:
Name and Title of Preparer (Print or Type)	

For OGS Use Only	
Reviewed By:	Date:
Decision: ☐ Full SDVOB waiver granted ☐ Partial SDVOB waiver granted; revised SDVOB goal: _____ % ☐ SDVOB waiver denied	
Approved By:	Date:
Date Notice of Determination Sent:	
Comments	